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ABSTRACT

This report summarizes what is known about educational improvement in Latin America and provides objectives and strategies to guide the Inter-American Development Bank (IDB) in supporting primary and secondary education in Latin America and the Caribbean over the next decade. It is based on six background papers as well as a review of the lessons learned from recent regional and country experience. The papers are "The Need for Education Reform"; "Five Critical Areas of Reform to Improve Quality and Increase Equity"; "The Challenge of Secondary Education"; "Navigating and Managing the System: Tools to Achieve Reform Goals"; "The Art of Implementing Education Reform"; and "Looking to the Future: Developing an IDB Action Plan." The critical areas of reform are making teachers partners in reform; providing more and better textbooks and teaching materials; selectively supporting the use of technology in education; decentralizing educational management and increasing accountability of key stakeholders; and strengthening early childhood education and development. The report summarizes new challenges facing secondary education in the region (i.e., meeting increasing quantitative and qualitative needs while simultaneously serving a more diverse clientele). It sets out information and management tools needed to meet long-term goals and confirms the fundamental importance of engaging in a long-term and consensual reform process. (Contains 81 references.) (SM)

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Reforming Primary and Secondary Education in Latin America and the Caribbean

An IDB Strategy

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An IDB Strategy

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Foreword

Children in Latin America and the Caribbean attending primary and secondary schools, especially those in rural areas and in urban slums, achieve levels of school completion, knowledge and skills that are inadequate to compete in a world where mathematics, language, and communication skills as well as flexibility, creativity, and the capacity to work cooperatively are increasingly fundamental for economic growth and social development.

Within this context, this paper summarizes experience to date and provides a set of objectives and strategies to guide the IDB in its support of primary and secondary education over the next decade. The paper defines five critical areas of reform—making teachers partners in reform, providing more and better textbooks and teaching materials, selectively supporting the use of technology in education, decentralizing educational management and increasing accountability of key stakeholders, and strengthening early childhood education and development. It also summarizes the new challenges facing secondary education in the region—to meet increasing quantitative and qualitative needs while at the same time serving a more diverse clientele. This report sets out the information and management tools needed to meet long-term goals and confirms the fundamental importance of engaging in a long-term and consensual reform process.

To prepare this strategy, the authors distilled the experience of many years of educational reform efforts in the region and elsewhere. As a result, it is hoped that this paper will also prove useful to policymakers and stakeholders throughout the region who are committed to educational reform and development.

Antonio Vives
Acting Manager
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Executive Summary

This paper summarizes what is known about how to improve primary and secondary education in Latin America and the Caribbean and provides a set of objectives and strategies to guide the IDB in its support of primary and secondary education over the next decade. It is based on six background papers prepared for this purpose, as well as a review of the lessons that stem from recent regional and country experience.

Inadequate education is a critical impediment to long-term economic growth in the region. In spite of substantial gains, the percentage of children who fail to complete primary schooling is almost twice that which would be expected on the basis of the region's income level. Children across the region consistently score lower on international tests than do children in developing countries with similar per capita incomes. Large differences in educational achievement between the poorest and richest segments of society exacerbate the income inequality endemic to the region.

CRITICAL ACTIONS TO IMPROVE PRIMARY AND SECONDARY EDUCATION

Lessons Learned in Key Areas of Action

There is now an increased awareness of the need to improve quality and equity in primary and secondary education. A wide variety of reforms and innovations in education, many of them systemic, many supported by the IDB, are under way in areas as diverse as decentralization and the use of instructional technology, and much has been learned.

For example, throughout the 1980s and 1990s many Latin American countries sought to reduce excessive centralization in education by decentralizing educational decision-making, encouraging school autonomy and increasing parental and community participation. There is evidence that these reforms, especially those leading to school autonomy, have had a positive impact. Based on experience to date, success requires consensus among the key stakeholders, stable or increasing educational spending, local capacity building and a new set of roles for ministries of education at the central or state government levels. These goals promote equity, provide technical assistance, monitor progress and provide incentives for improved performance.

Only a few countries to date have turned their attention systematically to teacher education issues and there is inadequate documentation of successful experiences. Nonetheless, there is consensus that the reform of teacher education in the region should emphasize classroom management skills and an early involvement in classroom practice. In addition, the subject content taught to prospective teachers should be increased. Better working conditions, new performance incentives and increased time devoted to real classroom learning are also essential to improve learning.

Investing in distance learning by radio and television has already had a major positive impact on quality, equity and access in several countries in the region. On the other hand, in spite of their promise, the large-scale cost effectiveness of computers and related Internet technologies on primary and secondary education has not been proven. For these newer technologies, it is best

to invest in a wide variety of pilot programs, in preparation for the time when the cost of information technology falls and teachers are more knowledgeable. At the same time, there is strong evidence that the countries of the region cannot neglect the provision and use of conventional learning materials such as books, educational materials and libraries.

Preschool education has a high pay-off in terms of helping low-income children to be more successful, remain in primary school and, ultimately, do better in the labor market. All governments in the region are investing in preschooling in one way or another. Experience has shown that the most cost-effective use of government funds is to target efforts to the neediest and to rely on and strengthen non-formal providers.

The Challenge of Secondary Education

Many countries in the region, especially the more advanced ones, have begun to pay attention to secondary education. Necessary reforms, which are already under way in several countries, include the separation of vocational preparation from formal secondary education; pushing most technical education to the post-secondary level; and, overall, making theory more applied, more concrete and more focused on solving problems. There is a consensus that the region's current enrollment ratio of 55 percent of the cohort will need to be increased significantly, especially through targeting access to the poor. Increased learning goals should include not only improved higher order skills in traditional academic subjects, but also elements such as increased civic responsibility and an understanding of the role of technology in society.

Educational Financing and Efficiency

The countries of Latin America and the Caribbean have a window of financial opportunity for investment over the next twenty years, as the demographic transition results in smaller increases in the number of school-age children and raises the percentage of the population in the labor force. With the right policies, the goals of increased quality, quantity and equity need not be contradictory but rather can be self-reinforcing. For example, system-wide improvements in educational quality, particularly but not exclusively at the primary level, will overwhelmingly benefit students from poor families, since any significant improvement in quality will result in increased student promotion and achievement; reduced repetition rates could then result in lower overall costs.

Using Information for Policy Decisions

Many countries in the region are already making major efforts to improve statistical systems, an essential component of better project design and improved decision-making and policy dialogue. Most countries have initiated educational assessment systems. To ensure that assessments truly become a tool for improving learning it will be important to also foster institutional development, training and appropriate feedback to stakeholders. To strengthen applied research and identify what really works in education, there is a need for institutional development, the establishment of a consensus among all stakeholders on the value and importance of research and the development of an agenda for research, which will vary from country to country.

Implementing Educational Reforms

Experience has shown that the critical attributes to ensure the success of reforms include leadership, consensus and continuity; adequate social marketing; feedback on achievement of means and goals permitting mid-course corrections; incentives to encourage actors and stakeholders to behave in ways that strengthen the reform process; and training to ensure that key actors have the capacity to implement reforms. A specific area in need of renewed attempts at policy research and dialogue is the role of teachers' unions, a key player in the dynamics of educational reform.

While all countries in the region need to focus on quality and equity, each country will need to pursue its own set of solutions based on its economic resources and current level of educational

development. In a few lower-income countries, and in the poorer regions of others, increasing initial enrollment in basic education is still an issue. Increases in secondary enrollment in each country will depend on current enrollment ratios, socioeconomic conditions and perspectives, and the rigor with which countries identify cost-effective solutions to meet targets.

THE ROLE OF THE IDB AS A LEADER IN THE REGION

Lending Priorities

Since 1965, the IDB has committed, on average, close to 5 percent of its yearly lending to the education sector. Lending to education increased significantly, to 9.5 percent in the period 1994-97, as a result of the new development strategy as articulated in the IDB's Report on the Eighth General Increase of Resources of 1994, which provided a specific mandate for education.

The main objective of the IDB's support for primary and secondary education will be to improve quality and equity. The Bank will also support increased access to schooling where necessary, especially at the secondary level. Because of the quantitative needs, lending in secondary education is expected to be high (in terms of amounts, if not necessarily in the number of operations). To achieve these goals, the IDB will examine the reform issues described in this paper. Nonetheless, the locus of reform has to be inside the country. The Bank will endeavor to understand the moment of the country, its institutions and its needs, as well as the variety of economic and educational conditions within the region.

In its lending, the IDB will focus on the key actions to improve quality and equity that are described above, taking into consideration each country's specific situation. This will include reviving the school as an active sphere of management, innovation and social responsibility through increased autonomy, intense community participation and, wherever relevant, decentralization and local government involvement. It will also include increased support of pre- and in-service training of teachers with a focus on innovative programs and the extension of those programs judged cost-effective, establishing incentive programs to attract higher quality teachers and analytical work and programs to improve teacher incentives and accountability at the school level. The IDB will also support a prudent but intense application of the potential of technology to expand coverage and improve quality, especially through the mass media (radio and television), as well as through pilot programs in the use of computers and the Internet. The IDB will especially focus on ensuring sustainable financing of the most cost-effective mixes of inputs, processes and incentives to raise student achievement and retention in school; and on increased equity through targeted interventions, including preschooling. The IDB will also act to strengthen assessment systems, statistics, applied research, feedback to stakeholders, and social marketing of reform objectives.

While the Bank is pleased to respond to increasing requests for support of secondary education, it regards primary education as a long-standing commitment, not a transient preoccupation. The IDB will, therefore, proactively review progress in primary education and seek follow-on loans to those now under implementation. The Bank is also prepared to fund the capital costs associated with expanding access to secondary education. Support for secondary education will always be accompanied by attention to designing secondary school models which are relevant for the 21st century, as well as to quality improvement, increased equity and efficiency, sustainable financing and better school management. Given the difficulties of appropriating more public funds to education and considering that private education often brings variety and more cost-efficiency, the IDB will consider funding some private education costs, provided equity considerations are met.

Processes

In all of its efforts in primary and secondary education, the IDB will seek to ensure the quality, implementability and sustainability of its

projects. In particular, it will encourage client, beneficiary and stakeholder ownership; undertake sectoral and economic analysis to learn about the issues and options of education reform and their relationships to the larger socioeconomic context; analyze institutional capacity and sustainability; and devise simple but robust monitoring and evaluation instruments. In its project design the IDB will help countries test out new ideas on a small-scale (pilot project) basis; use a process rather than a blueprint approach for education reform projects; and utilize a wider range of lending instruments. The IDB will also reconsider the set of financial instruments that can be deployed to support education, including the development of a simplified procedure for financing pilot projects, research and participation in international programs, and financing private education through support for student loan schemes, lines of credit for private school construction and voucher systems.

Emerging Issues and Dissemination of Best Practices

The IDB is uniquely positioned to play a role in collecting, systematizing and disseminating good practices in the field and in identifying emerging issues. Jointly, as well as on its own, the IDB will support on-site and virtual applied research, conferences, study tours and training programs. The IDB has already identified a number of crucial emerging issues in primary and secondary education where applied research and pilot projects are needed. These include instructional technology, where the Bank is helping countries to undertake pilot and development projects to meet long-term educational needs; teacher education, working conditions, teacher careers, in-service training and classroom pedagogy, where in conjunction with others the IDB has undertaken a series of studies; educational statistics and assessment, where the IDB expects to continue its support for programs enabling countries across the region to share their experiences; civic education; and how public support to the private sector can extend the reach of public funds, increase competition and ensure equity.

Collaboration

The IDB will collaborate with other key players in the field, such as the World Bank, ECLAC, UNICEF, the Caribbean Development Bank and USAID, by identifying common issues and a research agenda, sharing information, jointly supporting conferences and analytical work, and capitalizing on the relative strengths of each of these organizations. The IDB will also make special efforts to link with and begin a dialogue with NGOs working in education, country-level think tanks and advocacy groups, and the growing number of private institutions in education and in publishing.

Looking Towards the Future

In response to the interest and concerns expressed by participants in the 1998 Santiago Summit, Bank management announced a renewed commitment to education lending and anticipated an expansion of its activities in the sector. In pursuit of this goal, the Bank will undertake specific country by country programming discussions on increased investment in education and, in collaboration with experts across the region, deepen its understanding of what works best in education and under what circumstances.

The Need for Education Reform

EDUCATION AS A CATALYST FOR DEVELOPMENT

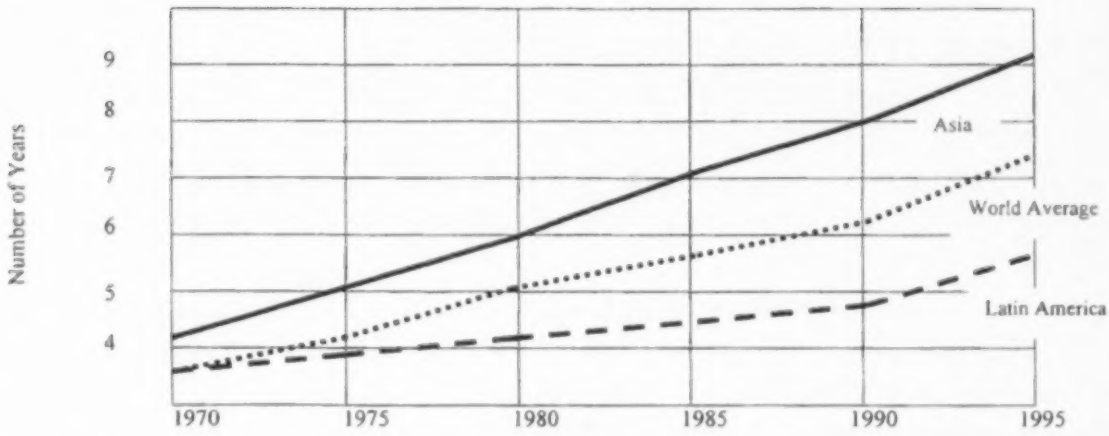
This paper summarizes what is known about how to improve educational quality, efficiency and equity in primary and secondary education in Latin America and the Caribbean. It also examines issues related to achieving the goals of increased quality and equity, summarizes the changes to date and the priorities for the future, and provides a set of objectives and strategies to guide the IDB in its support of primary and secondary education over the next decade. It is based on six background papers commissioned for this study, as well as a wide review of recent regional and country analyses, policy statements and research on primary and secondary education.

The IDB has been lending to education since 1965. During the 1980s and 1990s the Bank increased its focus on lending to primary and secondary education. Over the same time the IDB's lending approach has evolved from supporting expansion and coverage to concerns for quality improvement; from an almost exclusive focus on construction and infrastructure to an explicit concern for management and pedagogy; from centralized control and monitoring to school-centered, community-based, decentralized approaches; and from project financing to a concern with system-wide financial sustainability. The IDB's involvement in the education sector has also evolved from top-down methods of program preparation and implementation toward more participatory approaches to service delivery.

At the outset it must be said that the world economy has gone through enormous changes in the past 20 years, and these have made the quality of education systems far more important to the economic health of nations. Global competition and the information and telecommunications revolutions are at the core of these changes. Economic growth under the new conditions requires national infrastructures that include, among other elements, a labor force with a solid base of reading skills, mathematical and scientific knowledge, problem-solving capabilities and even computer skills, as well as the capacity to communicate effectively. Political and economic modernization in Latin America and the Caribbean has given schools another major responsibility: the development of a civic culture that stresses tolerance, cooperation, and a broader sense of nation and community.

The weaknesses of education in the region are well known. *Young workers enter the labor force with fewer years of education, on average, than workers in Southeast Asia and other developing regions and the gap is widening* (Birdsall, 1998; Filmer and Pritchett, 1998, and Graph 1). In spite of substantial gains in the reduction of illiteracy, in gender equality and in access to primary education, the percentage of children who fail to complete primary schooling is almost twice that which would be expected given the region's income level (IDB, 1996). By the early 1990s, workers in Latin America had an average of 5.2 years of education, compared to 7 years for countries at similar levels of economic development. Simulations suggest that if the region's educational achievement were equiva-

Graphic 1
Years of Education of the Labor Force



Source: Londoño and Székely, 1997.

lent to that of countries in the Far East, per capita income could be increased annually by 0.5 percent.

Learning in schools, by all accounts, remains strikingly deficient in all but a few elite institutions. Disappointing achievements in primary school remain the number one educational problem in most Latin American countries. Latin American students included in international testing research projects consistently score at the bottom of developing countries (see Tables 1 and 2). The region's educational institutions are among the worst rated by international leaders and investors (World Economic Forum, 1997). Close to 80 percent of low-income students in Latin America are not able to understand written messages after six years of schooling, even if they have passed six grades (Schiefelbein, 1996).

The region exhibits the largest income inequality in the world, which at the same time reflects and perpetuates disparities in educational opportunities for different population groups. In 1990 the gap in years of education between the richest 10 percent of 21-year-olds and their counterparts in the poorest 30 percent was 4 or more in 9 out of 15 countries included in a recent IDB analysis, and for at least 4 countries had actually increased when compared to what it was in 1980 (IDB, 1998, and Graph 2).

There is widespread support for the idea that a good education not only includes good subject learning but also the encouragement of trustful social relationships and an increased awareness of the basic rules of citizenship in a modern society, the practice of which should start at the school level. Yet, little is known or energetically carried out to inculcate these values in the region.

After more than a decade of market-oriented economic reforms, the region is undertaking a second, and perhaps more difficult set of social and institutional reforms. Among the most important are those related to education. In fact,

education may well be the region's most critical social issue over the next decade and its most important catalyst for development. The critical need for primary and secondary education in the region is "systemic" reform; changing structures, incentives and financing patterns rather than just increasing resources for institutions or practices already in place.

Table 1
Achievement Scores of Latin America and the Caribbean

The IDEA Study of Reading Literacy, 1989		
Latin American and Caribbean Countries	*Mean*	*Standard Deviation*
Trinidad and Tobago	451	79
Venezuela	383	74
Other Countries		
Finland	569	70
United States	547	74
Hong Kong	517	71
Singapore	515	72
Spain	504	78
West Germany	503	84
Indonesia	394	59

Source: W.B. Elley, 1992.

The International Assessment of Educational Progress Test of Mathematics and Science, 1991		
Country	*Mean*	*Standard Deviation*
Mathematics Test		
Korea	73	0.6
Taiwan	73	0.7
Spain	55	0.8
United States	55	1.0
Portugal	48	0.8
São Paulo, Brazil	**37**	**0.8**
Fortaleza, Brazil	**32**	**0.6**
Maputo and Beira, Mozambique	28	0.3
Science Test		
Korea	78	0.5
Taiwan	76	0.4
Spain	68	0.6
United States	67	1.0
Portugal	63	0.8
São Paulo, Brazil	**53**	**0.6**
Fortaleza, Brazil	**46**	**0.6**

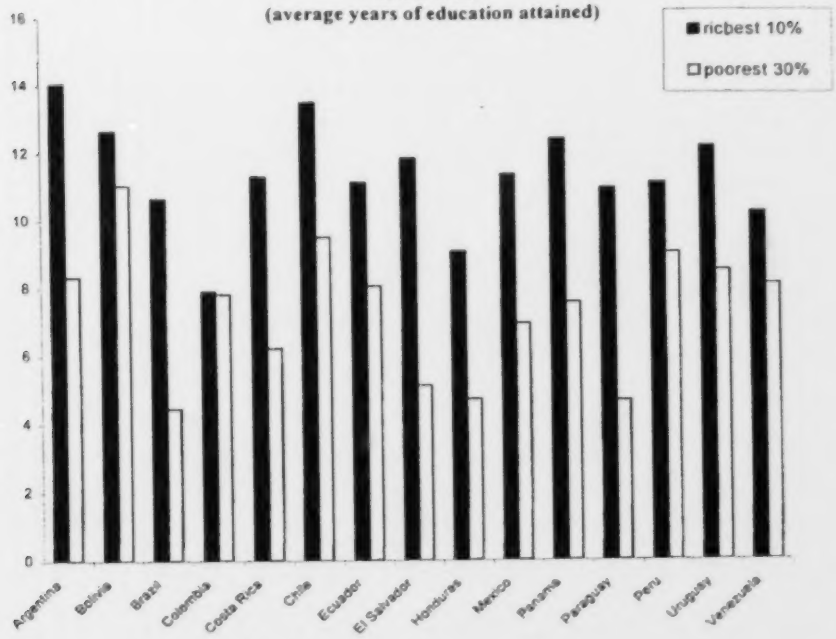
Source: Educational Testing Service, 1992.

Table 2
Mathematics Achievement in the Third International Mathematics and Science Study
Percentage of Students Achieving International Marker Levels, 8th Grade

Country	Math Achievement 8th Grade	Top 10% Level	Top Half Level	Achievement Differences between 7th and 8th Grade
Singapore	643	45	94	42
Korea	*607*	*34*	*82*	*30*
Japan	605	32	83	34
Hong Kong	*588*	*27*	*80*	*24*
Belgium (Fl)	565	17	73	8
Czech Republic	*564*	*18*	*70*	*40*
Slovak Republic	547	12	64	39
Switzerland	*545*	*11*	*65*	*40*
Austria	539	11	61	30
France	*538*	*7*	*63*	*46*
Hungary	537	11	60	35
Slovenia	*541*	*11*	*61*	*43*
Russian Federation	535	10	60	35
Netherlands	*541*	*10*	*63*	*25*
Bulgaria	540	6	58	26
Canada	*527*	*7*	*58*	*33*
Ireland	527	9	57	28
Belgium (Fr)	*526*	*6*	*58*	*19*
Austria	530	11	57	32
Thailand	*522*	*7*	*54*	*28*
Israel	522	6	56	--
Sweden	*519*	*5*	*53*	*41*
Germany	509	6	49	25
New Zealand	*508*	*6*	*48*	*36*
England	506	7	48	30
Norway	*503*	*4*	*46*	*43*
United States	500	5	45	24
Denmark	*502*	*4*	*47*	*37*
Scotland	498	5	44	36
Latvia (LSS)	*493*	*3*	*40*	*32*
Spain	487	2	36	39
Iceland	*487*	*1*	*37*	*27*
Greece	484	3	37	44
Romania	*482*	*3*	*36*	*27*
Lithuania	477	1	34	49
Cyprus	*474*	*2*	*34*	*28*
Portugal	454	0	19	31
Iran, Islamic Republic	*428*	*0*	*9*	*27*
Kuwait	392	0	3	--
Colombia	**385**	**0**	**4**	**16**
South Africa	384	0	2	7

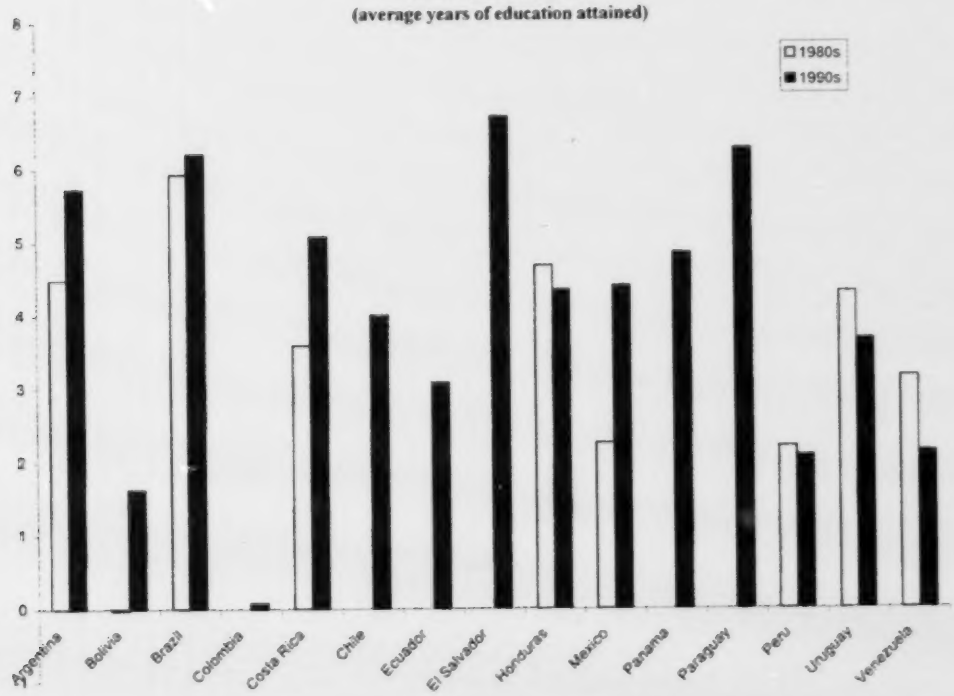
Source: Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study (TIMSS) (Chestnut Hill, Mass.: Boston College / TIMSS International Study Center, 1996).

Graph 2
Education Attainment of the Richest and Poorest 21 Year Olds in the 1990s
(average years of education attained)



Source: Calculated using data from Birdsall, Berhman, Szekely (1998)

Education Gaps Between the Richest and Poorest 21 Year Olds in the 1980s and 1990s
(average years of education attained)



Note: Gaps are calculated by subtracting the average years of education attained by the poorest 30% from the average attained by the richest 10%. Source: Calculated using data from Birdsall, Berhman, Szekely (1998)

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An awareness of these accumulated shortcomings, together with an understanding that education is a key element in fighting poverty and reducing income inequality and also serves as the natural incubator and safeguard of contemporary citizenship and democratic values, has resulted in the mobilization of constituencies that include parents, students, teachers, governmental authorities, businesses, nongovernmental organizations and the media. These constituencies are vocally demanding more resources, new policies and better decisions for the education sector; resources, decisions and policies good enough to turn education systems into institutions capable of addressing the economic, social and cultural challenges of the global economy. Education is not only becoming a real priority in the budgets, but also in the minds, words and actions of political and business leaders and opinionmakers.

Fortunately, the region is now characterized by a wide variety of experiments and innovations in education, some of them systemic, many of them just getting started, and many already enjoying support. There is evidence that public investment in education is increasing from the low levels of the 1980s. This paper incorporates the lessons learned from the reform experience to date in areas as disparate as decentralization, educational assessments, educational technology, and financing.

THE TWO OBJECTIVES OF REFORM: QUALITY AND EQUITY

Reforms need to focus directly on improving the quality of education. Quality has many definitions. The most important definition is "output- and learning-based;" that is, the extent to which children attain the knowledge and skills which society wishes to impart to them. These are not only academic skills. For example, one researcher (Gardner, 1993) has identified seven knowledge dimensions: linguistic, logical-mathematical, bodily-kinesthetic, spatial, musical, interpersonal and intrapersonal. In principle all, of these dimensions have a role in ensuring social and economic development, and are self-reinforcing. To meet these "output" objectives, the quality of school "inputs" and "processes" must be improved (see Annex Box 1 for a further discussion and definition of quality).

All available international comparisons show severe problems of quality in education across the region. The Third International Mathematics and Science Test (TIMSS) of the International Association of Educational Assessment (IEA) placed a strong emphasis on higher order skills. Colombia, the only Latin American country which reported the results of the test given to eighth graders, scored 41st out of 42 countries (see Table 2, Mathematics achievement in the TIMSS). At least ten of the participating countries had per capita incomes equal to or lower than that of Colombia. Venezuela and Trinidad and Tobago participated in the 1992 IEA reading survey of eighth graders. Venezuela scored lower than all countries except Nigeria, Zimbabwe, and Botswana. Trinidad and Tobago scored above those countries as well as above Thailand and Philippines. Brazil participated in an international mathematics test in 1992 and scored below all participating countries except Angola (see Wolff, 1998, for a summary of international tests). The region is also characterized by the highest primary school repetition rates in the world, averaging more than 40 percent in first grade in some countries.

The problem in most countries does not appear to be official curriculum content, especially at the primary level, which in many cases is reasonably up to date, but rather a failure to achieve curriculum goals because of inadequate teaching, too little time on task, lack of teaching materials, and inadequate management and incentives.

The second key goal for education reform is that of equity. Throughout the region there is a wide discrepancy in educational attainment by social class. In one country, for example, 60 percent of upper-income students aged 15 to 19 have reached ninth grade or higher, compared to only 20 percent of children in the poorest economic group. In another country, about 25 percent of the higher-income age group has achieved ninth grade or higher compared to about 5 percent of

the lowest-income age group. Despite almost universal access to primary education and rapid expansion of secondary schooling, Latin America still spends about 20 percent of total public resources for education on the 5 percent of the total student population attending universities.

Because public primary and secondary schools are of generally poor quality, pupils from low socioeconomic backgrounds are less likely to succeed academically, and are greatly underrepresented at higher levels of schooling. Indigenous peoples and students in rural areas and urban slums are particularly disadvantaged. Explicit equity enhancing programs are needed, ranging from school construction in urban slums and rural areas to incentives for teachers and subsidies for students. In the case of educational services provided to indigenous populations, special consideration is required regarding the strengthening of their cultural identity, traditions and language. This has to be achieved in such a way that it becomes supportive and mutually reinforcing *vis à vis* educational objectives, allowing for an adaptation of the educational process to the special needs of these populations.

Box 1: Gender and Education

Contrary to a number of other regions in the developing world, education in Latin America and the Caribbean is essentially equitable in terms of gender. But a few exceptions have to be noted. First, while coverage at the primary level is close to universal and gender-blind, in the poorest countries, especially those with large populations of indigenous peoples (e.g., Guatemala, Bolivia), coverage falls short and girls' enrollment continues to lag. Second, at secondary and higher education, overall enrollment rates for women in the region *exceed* those for men, at the secondary level by more than four points and at the tertiary level by more than two points. Rough regional averages put women's enrollment at the secondary level at 58 percent and at the tertiary level at 19 percent; for men, these figures are 54 percent and 17 percent, respectively. Differences are even greater in some Caribbean countries where gaps exceed 13 points at the secondary level (e.g., Dominican Republic and Trinidad and Tobago) and seven points at higher levels of schooling (e.g., Bahamas). Third, girls come out on top in other areas as well. In many countries across the region, dropout and repetition rates for girls fall below those for boys, and female promotion rates are higher.

The progress toward equality appears to be notable and fast. The lower schooling levels of women still lingering among older generations show how gender-biased schools were in the recent past. The situation faced by these generations differs significantly from that faced by younger generations: whereas illiteracy tends to be concentrated among older women, the level of education attained by their daughters and granddaughters surpasses that of their sons and grandsons. Such progress, however, has not been uniform. Increases in women's education take place at different speeds. Improvements in urban areas precede those in rural areas and indigenous women are often last to benefit from better and more schooling.

The linkage between education and work is far from linear. Education undoubtedly improves individual productivity and welfare. Yet, in and of itself, it cannot overcome many effects—and perhaps, distortions—in the labor market. Although women's enrollment in higher education surpasses men's, once in the labor market, women earn less and face higher rates of unemployment. This situation reflects, in part, the careers women tend to choose. Many enter the teaching or other "pink collar" tracks—professions which, although often requiring university education, command comparatively lower salaries in the labor market. Such "tracking" arises from a variety of factors, including the desire to have jobs that accommodate other interests as well as the use of stereotyped messages at earlier levels of education depicting women in family settings and men as professionals.

For the Bank, several implications follow. Gender equity should be promoted in all aspects of education policy. In some cases, this may mean promoting girls' education; in others, it may mean taking action to promote boys' education. The Bank will also continue its efforts to bring more women into the technical and scientific fields.

With the right policies there is no real trade-off between quality, quantity and equity. In the first place, as has been shown (Schiefelbein et al., 1998), the region spends over $4 billion per year on repeaters, most of whom are from low socio-economic backgrounds. As a result, system-wide improvement in the quality of education, particularly but not exclusively at the primary level, will overwhelmingly benefit students from poor families, since any significant improvement in quality will result in noticeable advances in student progress and achievement for precisely those students. Quantitative expansion, in turn, will only be achieved by making ever higher levels of quality instruction accessible to low-income children, the same children that today leave school too soon because it has little to offer in all respects. Concrete instances of this general principle abound: very small investments in textbooks have been shown to more than pay for themselves in increased learning and school flows (Harbison and Hanushek, 1992); and intensive accelerated courses for repeaters have been shown to more than pay for themselves in reduced repetition (Oliveira, 1998). Finally, recent declines in the birth rate imply a leveling off in the number of school-age children and declines in dependency ratios, providing the region with a "window of opportunity" during the next 20 years (see Graph 3 and Birdsall, 1998) to find adequate funding to achieve its goals of quality and equity as well as to increase enrollment ratios in secondary education (see Table 3 for a summary of enrollment ratios in primary and secondary education).

The rest of this paper enters into greater detail on these issues and on policies and strategies needed for the next decade. The chapter that follows examines five critical elements contributing to the quality of education and to equity—teachers, teaching materials, instructional technology, management, and preschooling. Because of the increasing importance and a lack, up to now, of a systematic analysis of secondary education in the region, a separate chapter examines issues specific to this level. Subsequent sections examine how education financing and information can be utilized to achieve education reform goals. A section then discusses issues related to implementing education reform. The paper ends with a summary of the IDB's strategy in light of the region's needs and the Bank's own capabilities, experience and mandate.

Graphic 3
A Window of Opportunity: Declining Dependency Rates

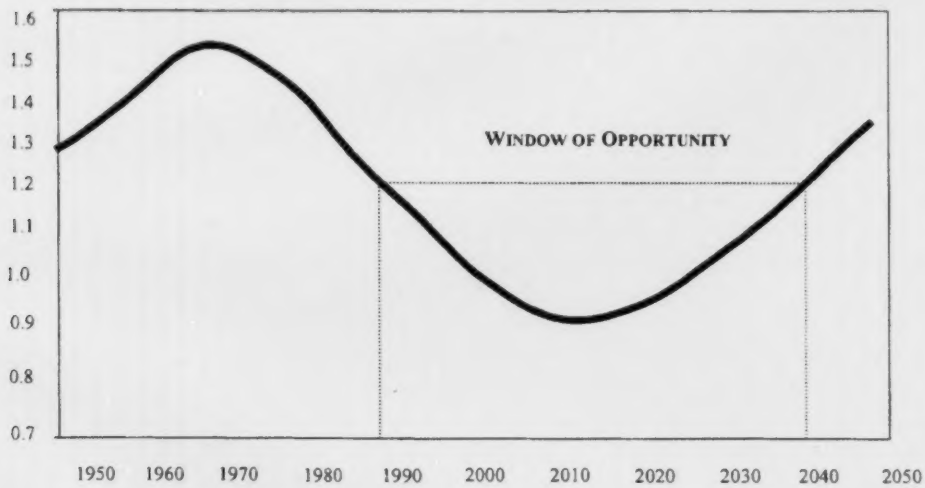

Table 3
Enrollment Rates in Latin America and the Caribbean

Country	Gross Enrollment Ratio							Net Enrollment Ratio			
	Preprimary % of Relevant Age Group	Primary % of Relevant Age Group		Secondary % of Relevant Age Group		Tertiary % of Relevant Age Group		Primary % of Relevant Age Group		Secondary % of Relevant Age Group	
	1995	1980	1995	1980	1995	1980	1995	1980	1995	1980	1995
Argentina	50	106	108	56	72	22	38	--	--	--	59
Bolivia	--	87	--	37	--	16	--	79	*91*	16*	*29**
Brazil‡	56	98	112	33	45	11	11	80	90	14*	19*
Chile	96	109	99	53	69	12	28	--	86	--	55
Colombia	28	124	114	41	67	9	17	--	85	--	50
Costa Rica	70	105	107	48	50	21	32	89	92	39	43
Cuba	89	106	105	81	80	17	14	95	99	--	59
Dom. Rep.	20	118	103	42	41	--	--	73	81	--	22
Ecuador	49	117	109	53	50	35	*20*	88	92	--	--
El Salvador	31	74	88	25*	32*	13	18	--	79	--	21
Guatemala	32	71	84	18	25	8	8	58	--	13	--
Haiti†	--	76	--	14	*22*	1	--	47	*26*	3	--
Honduras	14	98	111	30	32	8	10	78	90	--	21
Jamaica	81	103	109	67	66	7	6	96	100	64	64
Mexico	71	120	115	49	58	14	14	--	100	--	*46*
Nicaragua	20	98	110	43	47	13	9	98	83	23	27
Panama	76	106	106	61	68	21	30	89	*91*	46	*51*
Paraguay	38	106	109	27	38	9	10	89	89	--	33
Peru	36	114	123	59	70	17	31	86	91	--	53
Trin. & Tob.	10	99	96	70	72	4	8	90	88	64	64
Uruguay	33	107	11	62	82	17	27	--	95	--	--
Venezuela	43	93	94	21	35	21	29	82	88	14*	20*

Notes: *Italicized numbers* indicate 1992 statistics.

* Refers to higher secondary only: Bolivia - 4 years; Brazil - 3 years; El Salvador - 3 years; Venezuela - 2 years.

† Due to its low enrollment ratio, Haiti could also be considered Pre-Stage I; ‡ Numbers refer to some states in Brazil.

Definitions: **Gross enrollment ratio** is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Estimates are based on UNESCO's classification of education levels, as follows. **Preprimary** provides education for children not old enough to enter school at the primary level. **Primary** provides the basic elements of education at elementary or primary schools. **Secondary** provides general or specialized instruction at middle, secondary, or high schools, teacher training schools, and vocational or technical schools; this level of education is based on at least fours years of instruction at the primary level. **Tertiary** requires, as a minimum condition of admission, the successful completion of education at the secondary level or evidence of attainment of an equivalent level of knowledge and is provided at universities, teachers colleges, and higher-level professional schools. **Net enrollment ratio** is the ratio of the number of children of official school age (as defined by the education system) enrolled in school to the number of children of official school age in the population.

Sources: UNESCO, *World Education Report, 1995*; UNESCO, *Statistical Yearbook, 1997*. World Bank, *World Development Indicators, 1998*.

Five Critical Areas of Reform to Improve Quality and Increase Equity

This section examines five critical areas of reform where action is needed to deal with the problems of low quality, especially inadequate educational achievement, and equity: 1) changing the way teachers are trained, operate and are rewarded within schools; 2) reforming school management to emphasize autonomy, accountability and teamwork at the school level; 3) providing adequate learning materials; 4) using information technology appropriately to improve learning and meet new labor market demands; and 5) targeting preschooling, especially for underprivileged populations.[1] While there is much progress in these areas throughout the region, much still remains to be done.

TEACHERS: PARTNERS IN REFORM

Pedagogy throughout the region's classrooms, even in the more economically advanced countries, leaves much room for improvement. Children are told what to write in their notebooks, either arithmetic examples or short essays, and are tested on such exercises rather than problem-solving. In a fifth grade classroom, only a few children may understand fractions and how to add and subtract them. While they can read, their written work is simple. In the more advanced countries, teachers will ask pupils questions and get interaction, but the teacher works directly from the curriculum guide, and rarely goes outside the examples and explanations there. Group work on problem-solving and other innovative approaches using peer tutoring are only beginning to be tried. The amount of homework given to pupils is limited in all but schools for children of higher educated parents, effectively shortening the average school work day and the amount of time that children spend on schoolwork during the school year. At the secondary level especially, teacher subject matter knowledge is inadequate. While there is discussion of new pedagogical trends, such as constructivism, classroom practice benefits little from this approach except in a small number of schools.[2]

Teacher Education

Teacher education in the region is characterized by low standards, inadequate learning of subject matter and lack of practical hands-on activities. Recently, attempts have been made to raise educational requirements of teachers from completion of secondary level to normal education at the tertiary level. But while teachers' subject knowledge does increase, low quality, relatively inexpensive secondary-level teacher education often turns into low-quality, expensive tertiary-level teacher education. Generally, the practical content of teacher training gets weakened, removing or delaying contact with real classroom environments for prospective teachers.

Teacher education in the advanced countries integrates content (in science, mathematics, social studies, language, etc.) with developing flexible pedagogical skills adapted to children's multiple ways of learning and problem-solving.

[1] The reader will find an extensive discussion of these issues in the companion background papers listed in the annex. A later chapter discusses how to use financing and information to achieve these goals.

[2] In many faculties of education in Latin America there appears to be a misunderstanding of the concept of "constructivism," leading them to believe that it requires that individual teachers invent their own pedagogical approaches rather than identify, adapt and utilize best practices to meet students' needs.

The main focus in reformed teacher education in the region should therefore be a greater emphasis on classroom management skills, an increase in subject content taught to prospective teachers, and an early involvement in classroom practice—in short, increasing teachers' subject knowledge and providing them with more hands-on practical knowledge and approaches.

Most teachers in Latin America have been poorly trained and are already in the system. Studies have shown that good in-service training can have an impact (Lockheed and Verspoor, 1991). But in-service training tends to be used to teach teachers the latest pedagogical fad or the latest curriculum reform rather than to help them improve teaching in their classrooms based on an assessment of what they need to become better teachers. A particularly challenging but often overlooked problem is training for teachers in isolated and single-teacher schools in rural areas. This is an issue that several countries (Guatemala, Chile and Ecuador, among others) have been addressing recently by relying on "quality circles" and "training networks" that allow teachers to meet and share experiences with others in similar situations. Many of these programs build on the experience of the Escuela Nueva in Colombia, a long running rural education program that has many times demonstrated its effectiveness. Focused, linked and context-sensitive teacher in-service training has to be distinguished from teacher in-service in most countries. The latter is usually not linked directly to school improvement programs and is therefore often never implemented in classrooms.

Teacher Working Conditions and Incentives

Improved teacher training will be irrelevant if the conditions under which teachers work are not improved. Worsening working conditions, inadequate attention to professional development, poorly designed performance incentives, distorted supervisory practices and rundown physical facilities have contributed to the low quality of teachers, excessive absenteeism and the inadequate amount of time devoted to real classroom learning. In several cases, teachers unions can exacerbate these problems since they focus almost exclusively on salary issues, often have a political agenda and rarely pay attention to professional development or improving student learning.

There is much evidence that the current conditions are unsatisfactory. For example, many countries in the region report increasing difficulty in recruiting young people into teaching despite, in some cases, high levels of unemployment. Teacher absenteeism is a serious problem in most countries. The average number of days of teaching in one country's rural schools is less than one-half the 200 days scheduled for the legal school year. Since effective mechanisms for hiring substitutes are the exception rather than the rule in Latin America, teacher absenteeism generally means a classroom without a teacher for that day. In addition to teaching for fewer days, lower effort is also evident in the reduced number of hours of contact with students. Finally, in many Latin American countries, a significant number of school days are lost because of disputes between teachers and administrators that result in strikes. In a number of countries, payment policies for secondary school teachers (such as payment on the basis of hours taught), explicitly discourage a teacher from developing a commitment or identification with a particular institution.

Several studies of teachers' salaries show that, along with other civil servants, they experienced significant salary declines during the 1980s. A comparison of teachers' salaries with nonpublic sector jobs that require a comparable level of education yields no clear trends in the region, particularly after taking into account the often part-time nature of teachers' work (see IDB, 1996, pp. 289-292 for a detailed discussion of this issue). A study of teachers' salaries in Bolivia (Savedoff and Piras, 1998) showed that they were higher than in the private sector but lower than in the unionized public sector. At the same time, throughout the region many of those attracted into the education profession score lowest on university entrance and other achievement examinations. This suggests, first, that teacher salaries should be increased at least

in accordance with economic growth, and that in some countries major efforts are needed to make up for recent relative declines in salary competitiveness. In the long term, major increases in teachers' salaries could lead to a better and more committed performance, but only if such increases are accompanied by increased responsibilities and accountability, rewards for superior performance and penalties for gross misconduct such as continued absenteeism. All of these actions will need to be targeted to schools located in less affluent areas.

An integral policy response to these complex issues implies gaining insight in matters such as teacher career decisions, recruitment and selection patterns, incentives and labor markets. Innovative approaches will be needed in the areas of incentives, accountability, career regulations and mechanisms for recruitment, and selection and promotion of teachers. Supervision will need to be put on a more systematic basis by utilizing objective information on student performance to assist schools and teachers to improve pedagogy.

Limited but so far consistent evidence indicates that institutional contexts and incentives can make a difference in the productivity of teaching (Savedoff, 1998; Hanushek and Jorgenson, 1996, and Navarro and De La Cruz, 1998). Accountability mechanisms, empowering teachers, directors and communities, can influence teacher attendance, teacher concern for seeking relevant training—as opposed to formalistic certification—and generally improve performance. Incentives based on performance are being tried, mostly as group rather than individual incentives, in Chile and Uruguay. And monitoring systems with teeth are being implemented to enforce formal accountability systems (such as school attendance).

Teacher certification requirements also need to change. Teachers, especially at the secondary level, should increasingly be drawn from university graduates in disciplines other than teaching, who can then be trained in the specific art of teaching through one-year (or less) teaching certification courses and intensive practice teaching and in-service training. Some countries have already created flexible conditions for professionals to join the teaching profession, as a practical way to counter teacher shortages but also in a deliberate attempt at improving the quality of teaching in certain subjects.

MORE AND BETTER TEXTBOOKS AND TEACHING MATERIALS

With a few exceptions, Latin American countries have policies to provide books free of charge to primary school pupils, but only in exceptional cases to secondary students. However, except in the richest of the region's educational systems, not every pupil has a book, and in many schools, the books are kept in the school office. Because book deliveries are irregular (in many countries textbooks are sent to schools only once every few years), principals often tend to hoard their books, either keeping them in the main office, or making pupils return them at the end of the school day. Although books are, in theory, available for every pupil, they are not necessarily able to use them regularly in school or take them home. This alters teaching methods, the ability to assign homework, and the regularity with which pupils read or do problem sets. For these reasons, improving the availability of textbooks will primarily benefit low-income students.

In addition, misinterpretations of modern pedagogical theories have led some teachers to argue that books should no longer be used in the classroom. Finally, the choice of textbooks has been traditionally highly centralized in most systems given economies of scale in the production of printed material, but a cost has been paid in terms of the local relevance of content, its adaptability to changed curricula or school conditions, which points to the need to examine this issue carefully before designing systems and procedures for the selection of textbooks.

Policy-makers have long argued that school materials, in addition to books, have a major impact on the quality of education. Schools that have paper, scissors, crayons, and science equipment available, as well as a variety of chil-

dren's books other than textbooks, provide a much richer environment for learning than the bare classrooms found in most of the region. Learning materials enrich the learning experience of pupils that do not have access to them at home.

Research shows clearly that spending on materials has a much higher payoff than increasing teacher salaries or reducing student-teacher ratios, yet the political economy of education budgets is such that funding for materials is cut first when educational spending is reduced. Special care should be exercised to ensure that financing for materials and textbooks is provided in the context of sustainable institutional and budgetary arrangements in each country.

TECHNOLOGY IN EDUCATION: A NEW SOLUTION?

A recent IDB report (Castro, 1998) summarizes the current situation of technology in education. Briefly, the region's record in the use of radio and television for distance education and training is impressive. Mexico has been operating its Telesecundaria for many years, with many millions of graduates. Brazil's Globo Network, and its predecessor, Telecurso 2000, which offers a secondary equivalency program for young adults, has educated millions of the country's poor, who otherwise would not have access to secondary education. CENAMEC in Venezuela reaches thousands of students through a highly-effective primary-level radio instruction program. Evaluations of interactive radio in Nicaragua, Venezuela and Bolivia, as well as earlier evaluations of Telesecundaria, have demonstrated that such programs are highly cost-effective.

Based on this as well as worldwide experience and research, the case for investing in distance learning by radio and television is strong. It is possible to extend education to populations that are costly to reach by conventional schooling as well as to train groups in specific skills, including in-service teacher training, where a well-qualified instructor in a central location can teach large numbers of students or workers in specialized tasks. Reasonably high quality education and training can be extended to populations who otherwise would receive weaker quality education or none at all.

In spite of their promise, the large-scale cost-effectiveness of computers and related Internet technologies on primary and secondary education has not yet been proven.[3] Evaluations of small-scale experiments have shown that computers can have an impact on clássroom learning (Levin, Glass, and Meister, 1986). Drill and practice programs, tutorial programs, a host of commercially available learning games, LOGO, and computer simulations and animation used to explain scientific principles, and even word processing, with its built-in spell check and thesaurus programs, are all effective in improving student learning. The advent of Internet provides another popular form of data gathering for research and access to a wealth of information.

But the costs of computers, especially in Latin America, are still excessively high even with positive results. The current costs for equipment, computer specialists, maintenance personnel, and educational software in Spanish and Portuguese range from $40 per student for just two hours per week of computer interaction, to hundreds of dollars per year. Furthermore if computers are to be integrated into classroom teaching, then teachers must acquire more sophisticated teaching skills. Experience has shown that technology in the classrooms works as a learning tool only if teachers are thoroughly trained to use the technology and they find that it actually complements their work or saves them time. No wonder, then, that in almost all schools that have computers in Latin America and the Caribbean (and in the United States), the main result is to familiarize students with the technology itself (which is what most parents expect) rather than to reform the teaching process.

The challenge is to use computers and the Internet as a tool to build higher order cognitive

[3] In contrast, information technology is already revolutionizing higher education.

skills, more inquiry and project-focused modes of operation and more collaborative working styles, and to create smart learners. Past experience indicates that this is a difficult and time-consuming path, and one that has more to do with school reform than with technology as such. The region should, therefore, invest in a wide variety of pilot programs that seek to use information technology to raise the quality of learning in schools, especially at the secondary level. Within five years these technologies may well become cost-effective in the Latin American context. Hence the need to start early in the development of controlled experiments that use new software and new approaches to teacher training.

In all cases it is fundamental not to start with the technology but rather with educational objectives and problems, and then to seek the most cost effective integrated teaching/learning system, including a variety of technologies, which need not be the most advanced, to solve those problems. To be successful inside the school, all technology-based reforms require strong support from the top, acceptance and understanding by teachers, integration into the overall system of instruction, and phased introduction—to overcome bureaucratic inertia and resistance. It may also be appropriate to experiment with asking private vendors to provide technology-based learning either inside or outside the school setting.

SCHOOL AND SYSTEM MANAGEMENT REFORMS: CHANGING THE ORGANIZATION OF EDUCATION

Historically, Latin American educational systems have been plagued by excessive centralization and lack of school autonomy. It is convenient to treat the two issues separately since they are related but not quite the same. Decentralization means moving decisions to lower levels of government (from central to provincial, from provincial to municipal, etc.). Autonomy refers specifically to schools, although language may be loosely used in both cases.

Traditionally, education has been highly controlled from central ministries. Key decisions about who teaches, how and when teachers are rewarded, what they teach, and school management objectives have never been in the hands of local decision-makers who are most aware of student and community needs. This has been coupled with the lack of capacity in the central ministry to monitor the actual functioning of the schools. Central government bureaucrats have rarely known whether classes are actually taking place or what students are learning. School inspectors, allegedly the monitors of educational standards, usually check the most formalistic dimensions of instructional practices. In short, the central ministry (and its inspectorate) have been better at repressing change and innovation than at operating the system for steady improvement.

The result has been that most public schools in Latin America do not operate as coherent institutions with a sense of identity and commitment. Bureaucratic controls stifle local initiatives. The school principal, whom most research has shown is the fundamental source of school leadership, has had little authority, prestige or support. There has been little interaction with the community or with parents.

Throughout the 1980s and 1990s, in the face of these issues and problems, many Latin American countries (e.g., Argentina, Chile, Colombia, El Salvador, Mexico, Nicaragua, Peru, Venezuela) sought to reduce the central government's role in education by decentralizing educational decision-making (management) and, to a lesser extent, educational finance. Wherever the initial conditions of the educational system are highly centralized, it is clear that decentralization could be a tool for education reform—by liberating local initiatives, channeling additional funds originated locally, engaging new stakeholders or disarming interest groups born out of the excesses of centralism. This may have a value in and of itself. In addition, decentralization of education is often part of a larger process of political and administrative decentralization, in-

cluding increased participation, citizen involvement and responsive local authorities. Decentralization can also include direct support to private educational institutions and systems, as in the case of the publicly-funded *Fe y Alegria* schools in several countries and voucher systems in Chile and Colombia.

But decentralization is not a magic bullet. At its worst, decentralization is simply a means to devolve unsolved educational problems to state or provincial entities. In some cases, central governments have decentralized primary education to local levels without also transferring the corresponding resources. In addition, lower level administrations are often less capable of imposing meritocratic criteria and are an easier prey to spoils politics in the hands of local and more traditional political leaderships. In most cases, lower levels are not fully prepared to receive the greater responsibilities that they acquire with decentralization and need time to adjust. It may also happen that the overall size of the bureaucracy expands, without a corresponding increase in efficiency. In addition, to be effective, decentralization of management requires the recentralization and strengthening of evaluation and the normative and policy-setting roles of the center.

With centralized management, "control" of what is actually being done, or not, matters. Hence the importance of supervisors and inspectors. With decentralized management, the results are what matters. Transparency and equity figure prominently, as do data on enrollment and learning, per student costs, evaluation, information systems, input and participation from stakeholders, and mass campaigns. Supervisory systems need to be reformulated as technical assistance to help schools achieve agreed upon goals.

In short, decentralization works as long as it is part of a broader and coherent reform package containing the necessary provisions for preparing both the center and the local levels for the new functions. By contrast, considering the usual situation in the region, in which schools are powerless to manage their everyday matters, encouraging school autonomy tends to be a generally appropriate policy. The objective behind school autonomy is to increase innovation and responsiveness to pupil needs. Given more local and school-based financial decision-making at the school site, parents will increase participation and school teachers and administrators will increase quality, both by improving teaching and by using resources more efficiently.

To succeed, schools must collect and use data to improve their management. Parents must control teacher time-on-task; local management must be accountable for teacher costs; incentives must be provided by the center for improved achievement levels; teachers must be selected according to merit and with the participation of the community; etc. In at least two cases (the EDUCO program in El Salvador and the Brazilian state of Minas Gerais), research has shown that school attendance and student achievement improved significantly as a result of these reforms.

Parental and community participation is also a key concomitant of school management reforms. A child's learning can be characterized as a process of "joint production" involving education in the family and school. Especially during the years of primary schooling, parents who monitor their children's education closely are likely to motivate them to do well, as well as to assure that their children attend school regularly. Parents collectively can also apply pressure on school principals and teachers to exert more effort (Hannaway and Carnoy, 1993). Community monitoring can also help to reduce absenteeism by putting community pressure on offending teachers. El Salvador's EDUCO program has been particularly effective in these approaches.

The prerequisites to success of school autonomy and increased parent involvement are both financial and managerial. In the first place, educational spending will need to remain stable or even increase, so that communities and schools have real resources to allocate. In the second place, leaving schools to their own devices has been shown to bring no real benefits. Therefore central or state ministries of education need to become lean, strong and competent agencies with a new set of roles such as setting goals,

promoting equity, monitoring progress, evaluating educational results, providing incentives for promoting innovations and rewarding improved performance. Central authorities will need to ensure that poor localities and low-income schools have adequate financial, technical and human resources to undertake educational improvements by creating mechanisms that favor equity in the distribution of resources across states and municipalities. They will also need to be ready to intervene in cases of local nepotism or capturing of schools by local power groups. Finally these reforms must be linked with systematic efforts to raise expectations and to measure the results of school and pupil performance.

EARLY CHILDHOOD DEVELOPMENT: HELPING CHILDREN COPE FROM THE START

Early childhood development and education is increasingly viewed as a high-yield public investment, if properly conducted. Investment in early childhood development lowers the cost of primary schooling of low-income children who normally come unprepared and physically disadvantaged to learn in first grade. By raising the readiness to learn of the low-income pupils, learning expectations in schools also rise, producing significant improvements in overall teaching and student performance. Targeted early childhood development also reduces inequity, improves health and may even have a long-term impact on increased employability and reduced delinquency. The IDB is preparing a comprehensive discussion of issues and strategies for support of early childhood development (Morán 1998; see also Myers, 1997). It should be emphasized that learning begins at birth. Initially, childhood nutrition and health issues are paramount. As a child approaches school age, educational and socialization objectives become increasingly important. This paper mainly discusses the latter, especially the one or two years (preschooling) preceding entrance into primary school.

Latin American and Caribbean countries vary greatly in the proportion of preschool age children in preschools. For example, Argentina, Costa Rica and Mexico enrolled over half of all 4 and 5 year-olds in preschools in 1995, compared to 20 percent or less in El Salvador, Ecuador and Honduras. There is a wide variation in the public/private mix of preschool provision. More importantly, preschooling provision is highly skewed. Throughout the region, poor, rural and indigenous children have inadequate access to preschooling. In many cases their enrollment ratios are less than half those of more privileged groups.

Education policymakers often wonder whether it is better to invest in early childhood development or in improving the quality of primary education, and whether it is the public sector that should be investing more in preschools. Notice, however, that sound investment in preschools and, where practicable, in associated health and nutrition services, is a means to improve primary education. This is consistent with the mandates of the IDB'S Eighth General Increase of Resources. As noted above, preschool education has a high payoff in terms of helping low-income children be more successful, remain in primary school and, ultimately, do better in the labor market. Investment in preschooling is, therefore, a critical element of improvements in the quality of primary education and can effectively lower the cost per unit of output of the first years of primary education. By carefully targeting its efforts, the increased investment in preschooling can be kept to a minimum and the payoff can be particularly high.[4]

Most higher-income children across the region already receive some form of preschool education. Therefore, the main objective of public policy should be to target additional public resources to low-income, at-risk pupils in urban slums and in rural areas.

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[4] For example, providing a full year of preschooling to the poorest 25 percent of children at the same cost as that of primary school could increase total costs of a six-year primary system by no more than 4 percent.

In many countries, a significant fraction of enrollment, especially among the poor, is in multiple informal, private, unregulated and unaccounted-for day-care centers operating only a few months per year with untrained personnel. Hence, when low-income children do get preschooling, it is often informal, of very low quality and may even have a negative impact on their social and intellectual development. Public support, therefore, should also include training and subsidies to improve the quality of nonpublic services so that that they focus more on development than simply on caretaking. Child care programs for poor families in the region, such as Wawa Wasi in Peru and *Hogares de Cuidado* in Venezuela, might be cost-effectively upgraded to include pedagogical components, as an alternative to creating higher-cost preschools linked with the public system. Bolivia (PIDI program) has developed a highly innovative program for improving the quality of preschooling provided in private homes and community centers through radio broadcasts to caretakers' homes.

Preschooling should not become an extension of the formal primary system, resulting in excessively high costs and erroneous pedagogical approaches, following the easy path of building, hiring and inaugurating schools, with a high political payoff but little improvement in the educability of children. In fact, nontargeted, formalized preschooling may well detract from the painful efforts to improve the quality of primary education. In short, governments should limit coverage to whatever size group the budget can afford without compromising core standards of quality, beginning with targeted children at high risk of failure in the present education system. In particular, they should strengthen the educational content of low-cost private and NGO-provided programs. As additional funds become available public support can be extended to less at-risk children.

The Challenge of Secondary Education

STRUCTURE: THE MANY ROLES OF SECONDARY EDUCATION AND THE INCREASED HETEROGENEITY OF STUDENTS

Until recently, secondary education, has been the "forgotten" level of education in the region, a result of a lack of political visibility and the weaknesses of the constituencies for public secondary education. Higher education always had strong interest groups behind it and political activism at this level has been conspicuous. Since the 1980s, the multilateral banks have targeted primary education. As a result, reform and improvement are under way and primary completion rates are rapidly increasing, leading to enrollment pressures at higher levels. Unfortunately, just when the need to expand and reform secondary education is greatest, funding is inadequate and the analytical work is still lacking. Since little has been written up to now on the subject, this paper explicitly covers secondary education. Two background papers on the subject have also been produced.

Throughout the region, secondary schools face dilemmas posed by their multiple and complex roles; namely, the task of preparing students for higher education, forming solid citizens and offering what is necessary for those who complete their schooling at this level and enter the labor market. The problems are complicated by the increasing numbers of students entering secondary education with far different social backgrounds from those who previously participated in a relatively elitist system, as well as by decades of neglect. The result is that, in most countries of the region, the traditional structure, curriculum and approach of secondary education is obsolete. It neither offers a sound academic education that is compatible with the needs of a modern society nor does it handle well the task of preparing some students to enter the labor market. The number of subjects taught is excessive, making it difficult to delve into them and develop skills.

In addition to these fundamental structural issues, regional and country data, research and observations show that enrollment ratios in secondary education, in terms of access and equity, are much lower than in the region's chief competitors (see Table 4); repetition at earlier levels has resulted in the enrollment of large numbers of overage children and young adults; and the poor, especially those living in rural areas, are grossly underrepresented in secondary education. In terms of costs and efficiency, expenditures per student in the region, while varying greatly from one country to another, average $400 per student, which is lower than in the region's competitors. At the same time, with few exceptions, student-teacher ratios are not high, averaging 16:1 in the region as a whole. In terms of quality, learning in secondary school is inadequate by international standards; teachers' knowledge of the subjects they teach is inadequate, as are their pedagogical skills and, often, their motivation; curriculum is encyclopedic and out of date; learning materials are scarce and inadequate; schools rarely have a sense of mission and identity; and school directors enjoy little authority and recognition. Many of these problems are similar to those of primary education.

Table 4
Historical Evolution of IDB Lending in Education

Year	Primary	Secondary	Higher	Vo-Tec	Multi-Level	Total Education Lending (US$ mill.)	Total IDB Lending (US$ mill.)	% Lending in Education / Total IDB Lending	Total IDB Lending in Social Sectors (US$ mill.)	% Education / Social Sectors
1965			8.0			8.0	175.2	4.6	11.4	70.2
1966			29.1			29.1	396.0	7.3	139.6	20.8
1967			61.9	4.0		65.9	481.8	13.7	124.8	52.8
1968			9.4			9.4	402.7	2.3	56.3	16.7
1969			9.5	16.9		26.4	644.5	4.1	99.7	26.5
1970			6.7	4.5		11.2	626.1	1.8	84.7	13.2
1971			56.4	10.9		67.3	628.0	10.7	127	53.0
1972			13.4	15.3		28.7	772.7	3.7	133.9	21.4
1973			32.5	25.3		57.8	870.4	6.6	152.5	37.9
1974			9.0	10.0		19.0	1102.1	1.7	129.3	14.7
1975			50.0	20.8		70.8	1360.2	5.2	214.8	33.0
1976			12.8	6.6		19.4	1462.9	1.3	238.8	8.1
1977	9.6		14.6	20.4		44.6	1809.6	2.5	349	12.8
1978	54.9		30.0	15.5		100.4	1823.3	5.5	243.4	41.2
1979			13.9	13.3		27.2	2177.2	1.2	249.4	10.9
1980			32.5	21.0		53.5	2114.6	2.5	337	15.9
1981			7.5	7.2		14.7	2437.8	0.6	282.9	5.2
1982	28.0		147.8	25.4		201.2	2688.9	7.5	767.1	26.2
1983	71.0		2.0	78.5	15.5	167.0	3000.6	5.6	486.2	34.3
1984	25.4					25.4	3500.7	0.7	605.5	4.2
1985	19.9		37.5	34.6		92.0	2985.4	3.1	413.7	22.2
1986	55.8		12.0	50.4		118.2	2974.8	4.0	930.1	12.7
1987	12.1		63.2			75.3	2286.6	3.3	637.2	11.8
1988						0.0	1611.3	0.0	484.1	0.0
1989	90.4		4.7	20.0		115.1	2552.9	4.5	637.3	18.1
1990				14.4		14.4	3803.3	0.4	1680.7	0.9
1991	57.3					57.3	5330.3	1.1	2971.4	1.9
1992	39.6		56.0	40.0		135.6	5994.6	2.3	3295	4.1
1993	177.8			43.0		220.8	5963.2	3.7	2599.1	8.5
1994	473.0		175.1		321.0	969.1	5231.5	18.5	3681.4	26.3
1995	69.6				37.3	106.9	7223.3	1.5	4994.9	2.1
1996		140.0		3.3	100.0	243.3	6740.6	3.6	5137.3	4.7
1997	6.6	421.0		82.5	103.0	613.0	6024.0	10.2	3414.72	18.0
1998	144.1					144.1	2233.7	6.5	1772.5	8.1
TOTAL	**1335.1**	**561.0**	**895.5**	**583.8**	**576.8**	**3952.1**	**89430.8**	**4.4**	**37482.72**	**10.5**

Source: IDB STAIRS Database.

* Investments in pre-primary education are included in these figures. Although no precise figures are presented in the relevant loan documents, Bank investments in pre-primary education exceed $26 million. In addition, as of late 1996, Bank investments in project-related training (noneducation loans) were in excess of $2 billion.

Fortunately, many countries, especially the more advanced ones, have begun to pay attention to secondary education. Chile, Argentina, Colombia and Uruguay have recently undertaken major efforts to expand and improve secondary education. El Salvador, Costa Rica, Dominican Republic, Mexico, among others, have sought to expand and improve lower secondary education (grades 6 to 9). Brazil is planning to make secondary education improvement a national priority over the next four years. The time is, therefore, ripe to review issues and establish priorities.

One issue that is hotly debated is the relationship between academic, technical/vocational, scientific/mathematical, liberal arts and general/business education. Around the world there is an almost infinite variety of approaches to this issue. The United States and Canada have single comprehensive secondary schools which offer academic programs with varying degrees of tracking and demands, as well as vocational/technical programs. France splits post primary schools into different modalities—mainly math/science, arts and humanities, commercial and technical—and also has separate vocational schools. Traditionally, Latin America has opted for the academic/vocational dichotomy; and several countries have also adopted the French model of splitting academic schools. Germany sends two thirds of each secondary school cohort through its highly praised apprenticeship system. If this perplexing variety of models were not enough, several industrialized countries are in the process of rethinking these approaches and models.

Examining worldwide and regional issues and trends, we can identify the following important new approaches with regard to structure and schooling objectives:

- *There is an increasing separation of vocational preparation from the academic streams*, the major exception being in the areas of business and office training that have a natural affinity with academic studies. Academic schools need to shed their technical and vocational programs and move them somewhere else.

- *Technical courses, by and large, are being pushed to the post-secondary level.* This approach resolves the chronic problem of secondary schools that are torn between preparing students for higher education and providing occupational training (which often renders them unable to perform correctly either function).

- Several large countries are opting for technical tracks that are less an occupational training than an academic education with emphasis on some broad family of occupations. These are the *polimodales* of Argentina and Mexico, which are not very different from the French *baccalaureats*.

- *The few successful secondary technical schools are closely tied to industry.* They are expensive, offer high quality education and training and tend to specialize in one industrial area (electronics, dairy, wines, ceramics and precision mechanics). A few of the best schools in this category offer a variety of services to the industrial sectors they cater to, sometimes including research and development.

- *In all cases, there is the need to make the teaching of theory more applied, more concrete, more focused on solving problems, rather than being simply the memorization of facts and theories.* One of the new tendencies is to make academic education more practical and concrete which is not the same as vocational. Academic and vocational education need to strengthen the bridge between theory and practice because academic education needs practical applications and vocational education needs training in stronger theoretical foundations.

Beyond these approaches, there remains the complex dilemma of the choice between offer-

ing the same syllabus to all or tracking students and offering easier or more applied programs to some students and academically more demanding ones to others. There is as yet no simple and clear approach to this difficult question.

MEETING QUANTITATIVE NEEDS AND QUALITATIVE CHALLENGES

In addition to these structural questions, secondary education faces equally difficult issues of quantity and quality. The region's current 55 percent enrollment ratio will need to be increased significantly in order to raise the overall educational attainment level of the general population to compete on international markets and reduce inequity in the region. For the lower-income countries, the focus will be on expanding access to a complete lower-secondary education, especially in rural areas. For higher income countries, the focus will be on reaching the underserved populations in lower-secondary education and on the overall expansion of upper-secondary education. As noted, increases in enrollment in each country will depend on socioeconomic conditions and outlook, as well as on the rigor with which they identify cost-effective solutions. Most countries in the region have already embarked on secondary school expansion programs.

Based on a simulation of projected increases in secondary education, from 55 to 75 percent of the school-age population, the region would need to invest over US$10 billion in secondary school construction over the next 10-12 years. Given recent and expected economic growth in Latin America, this amount is not excessive. In fact, if economic growth continues at the pace registered between 1990 and 1996 (3.2 percent per annum) major increases in quality would also be affordable provided the right policies are followed.

For purposes of improving equity, countries will need to implement proactive policies targeting the poor and underserved. These policies could include targeted school construction in underserved urban slum and rural areas; more recurrent funding and assistance to schools in rural areas and urban slums (including teacher incentives); financial and other incentives for motivated teachers and principals to work in underprivileged areas; distance education for hard-to-reach groups (rural and young adults); and, in some cases, direct financial support to lower-income students to cover the cost of foregone wages (in the form of, say, textbook subsidies). Most countries are targeting their school construction efforts, and a few (Mexico, El Salvador and Brazil) are using distance education for hard-to-reach populations. But very few are providing monetary and other incentives for qualified teachers to work in the urban slums and rural areas.

Qualitative improvement in secondary education is similar to that of primary education, but there are differences. As in primary education, the fundamental need is for increased learning, especially of higher order skills in mathematics, communications and language. In addition, secondary education in the region can no longer afford to overlook the increasing importance of developing abilities and skills other than academic ones. Learning goals, therefore, should also include increased capacity for cooperative problem solving and teamwork; civic responsibility in a democratic society; creativity and innovation; an understanding of the role of technology in society; environmental awareness; and knowledge of foreign languages. Studies are needed to identify how best to achieve these different learning goals. The problem of learning in secondary education is often not only a problem of inadequate curriculum, but also of a lack of correspondence between the curriculum that is actually being taught and the official curriculum, the textbooks used, and teacher training, especially in the more traditional academic areas of mathematics, science and language. If the problem is a lack of correspondence, the solution is not another round of curriculum reform, but rather improved pedagogy and better teaching materials.

Attracting more highly-qualified teachers is even more important in secondary education, since secondary school teachers have more labor market options available to them. The increased

labor market demand for computer skills will make it particularly difficult to recruit mathematics teachers. As a result, financial incentives will need to be provided to all teachers, but especially those in scarcity areas such as mathematics. However, salary increases without increased professional responsibilities and accountability could well be self-defeating. Teacher training institutions and faculties need to receive special attention since they are essential for each country's economic future. Training institutions for secondary school teachers need to pay special attention to increasing their graduates' knowledge of subject matter and ensuring that all new teachers have a practical knowledge of technology.

Improved instruction requires more time on task. In most Latin American countries[5] the length of the school day varies between 3 and 4.5 hours. Overall, Latin American public schools offer between 500 and 800 hours of schooling per year compared to the 1,200 hours offered by schools in the industrialized countries (OAS, 1998). In addition, in many countries between 10 and 40 days are regularly lost to strikes (IDB, 1996). Inside the classroom much time is taken up with routine and administrative matters rather than active teaching. A number of countries (Chile, the state of Paraná in Brazil, and Uruguay) are actively seeking to increase student contact hours to approach the level of developed countries. As discussed below, this needs to take place in a cost-effective manner.

Perhaps more critically than in primary education, to ensure a commitment to superior instruction and learning, public school management reform will need to focus on giving the school director authority and adequate remuneration, ensure that he/she is qualified, and provide feedback as well as rewards on the basis of performance. The Brazilian state of Paraná as well as Argentina have initiated these types of secondary school reforms. School directors could receive significantly higher salaries provided they are selected on the basis of competency and are subject to performance reviews. Particularly in secondary education, authorities will need to provide financial and administrative incentives for teachers to teach full time in one school to ensure that teachers can act as part of a team rather than as itinerant providers of lessons (taxi-teachers). The physical facilities of secondary schools will require adequate space for teachers to prepare their lessons and interact with other teachers. Efforts should be made to end the isolation of teachers by opening up the classroom to observation by colleagues and advisers. Parental involvement, while important, will not be a panacea, especially in cases where parents only have a primary education or students are already young adults.

[5] Time in school appears to be adequate in the English-speaking Caribbean.

Navigating and Managing the System: Tools to Achieve Reform Goals

Declining birth rates and a decreased dependency ratio in many countries will ease the pressure on public spending for expanding lower levels of schooling and should allow governments to focus more on raising the quality of primary education. But increased financing needs to be provided in a cost-effective manner and must include incentives for improved performance. At the same time, information systems must be devised to measure the impact of the increased investment and to permit adjustments in the financing mix.

EDUCATION FINANCING AND EFFICIENCY: MORE RESOURCES, BETTER USED

Managing Educational Financing

In Latin America, financial constraints continue to hamper improvements in education thus shaping educational reform and limiting the room for unwise policy initiatives. In the early 1980s, just as they should have begun transforming their industrial base and investing heavily in improving the educational infrastructure, most countries in the region well besieged by a massive debt crisis. Although educational expansion continued, it did so at the cost of allowing educational quality to stagnate or decline even further. Yet, the resumption of economic growth in the 1990s has not dampened pressures to keep public spending down. Nonetheless, Latin America and the Caribbean have a window of financial opportunity for investment over the next twenty years, as the demographic transition results in smaller numbers of school age children and an increased percentage of the population in the labor force (see Graph 3 and Birdsall, 1998). Dependency ratios will decrease to 1.0 by the year 2010 from the 1990 figure of 1.3. Between 1995 and 2005 the school-age population is expected to increase by no more than 8 percent. Countries that were severely hit by the crisis of the eighties have not, by the late nineties, recovered the per capita levels of public spending reached twenty years ago, but most of them are clearly making substantial efforts at reestablishing minimally adequate funding levels.

On average, public expenditure in the region is 4.5 percent of GDP, about as much as could be expected in education as a proportion of GDP. This average masks wide variations, with the English-speaking Caribbean countries well above and many other countries in Central and South America well below international norms. Furthermore, a significantly larger portion of these funds than in the Far East go to higher education, and only 1.1 percent of GDP goes to primary education (see Table 5). Deep distortions and problems persist in education finance in the region. A substantial increase in funding for the education sector under the current rules for budget distribution and use faces a serious risk of being misallocated (see Graph 4).

A recent report that reviewed the IDB's lending experience for educational projects (Deutsch and Verdisco, 1997) found little presence, in most projects, of system-wide assessments of education finance, calling into question the sustainability of projects and the overall soundness of the policies encouraged. As an illustration, most education systems assign increases in public financing to teachers' salaries, leaving other key inputs—textbooks, school supplies—

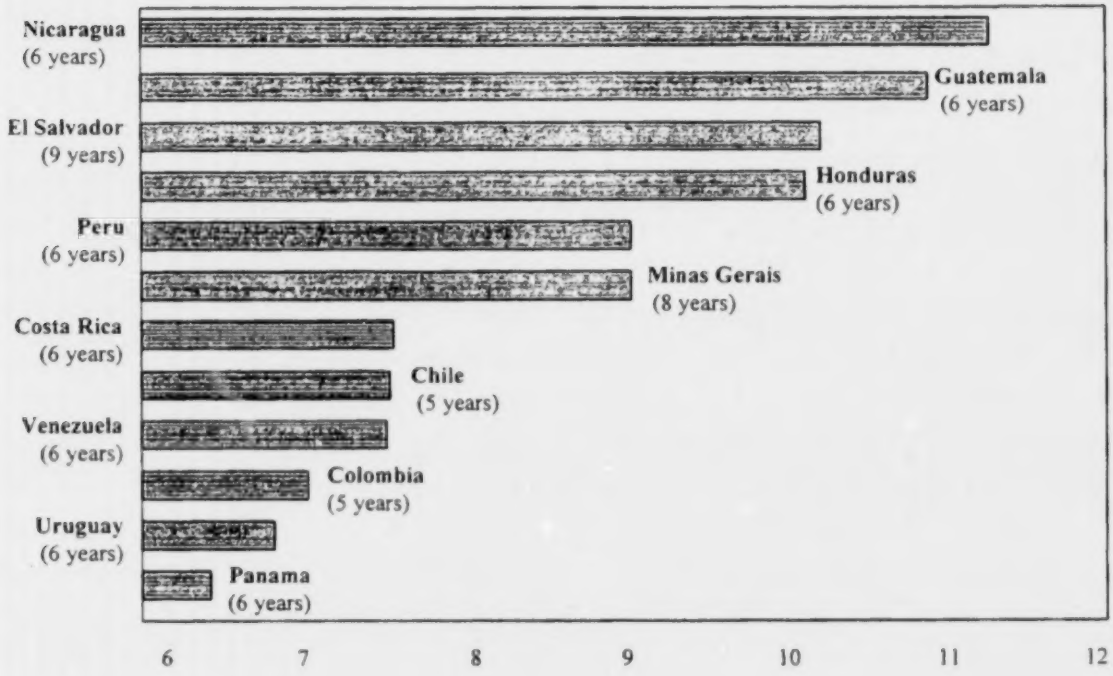
Table 5
Education Policy and Resources: Comparative Studies

Country	Public Expenditure on Education		Expenditure per Student						Primary Pupil-Teacher Ratio	Duration of Primary Education
	% of GNP		Primary % of GNP per Capita		Secondary % of GNP per Capita		Tertiary % of GNP per Capita		Pupils per Teacher	Years
LATIN AMERICA AND THE CARIBBEAN										
	1980	**1995**	**1980**	**1994**	**1980**	**1995**	**1980**	**1995**	**1995**	**1995**
Argentina	2.7	4.5	6.5	16.2	..	12.0	10.4	17.0	..	7
Bolivia	4.4	6.6	13.7	..	..	18.0	..	67.0	..	8
Brazil	3.6	..	8.7	..	11.0	..	0.1	..	23	8
Chile	4.6	2.9	9.6	8.5	..	9.0	..	21.0	27	8
Colombia	1.9	3.5	5.2	10.5	..	11.0	41.1	29.0	25	5
Costa Rica	7.8	4.5	13.1	10.6	..	19.0	76.1	44.0	31	6
Cuba	7.2	..	10.4	..	..	..	28.5	..	14	6
Dom. Rep.	2.2	1.9	3.1	2.9	..	5.0	..	5.0	35	8
Ecuador	5.6	3.4	5.6	3.9	..	15.0	22.3	34.0	26	6
El Salvador	3.9	2.2	12.4	..	..	5.0	103.5	8.0	28	9
Guatemala	..	1.7	4.9	6.2	..	5.0	..	33.0	34	6
Haiti	1.5	..	5.9	..	..	..	65.3	..	..	6
Honduras	3.2	3.9	10.9	..	..	22.0	72.1	59.0	35	6
Jamaica	7.0	8.2	14.0	14.7	..	25.0	166.6	193.0	37	6
Mexico	4.7	5.3	4.3	7.8	..	20.0	..	61.0	29	6
Nicaragua	3.4	..	7.8	13.1	..	..	85.9	..	38	6
Panama	4.8	5.2	12.0	11.7	..	13.0	29.1	47.0	..	6
Paraguay	1.5	2.9	..	7.9	..	11.0	..	52.0	24	6
Peru	3.1	..	7.2	..	..	..	5.1	..	28	6
Trinidad &Tobago	4.0	4.5	9.2	..	..	17.0	55.1	77.0	25	7
Uruguay	2.3	2.8	9.3	8.3	..	8.0	..	28.4	20	6
Venezuela	4.4	5.2	3.0	..	..	..	56.8	..	23	9
EUROPEAN UNION										
Austria	5.6	5.5	16.1	18.8	..	25.0	37.9	32.0	12	4
Belgium	6.1	5.7	17.8	..	..	25.0	34.8	35.0	12	6
Denmark	6.9	8.3	38.4	..	..	..	..	55.0	10	6
Finland	5.3	7.6	20.7	24.0	..	30.0	27.8	46.0	..	6
France	5.0	5.9	12.0	15.9	..	26.0	21.8	24.0	19	5
Germany	..	4.7	..	..	..	..	..	35.0	18	4
Ireland	..	6.3	11.5	14.9	..	23.0	38.8	38.0	23	6
Italy	..	4.9	..	19.9	..	26.0	..	23.0	11	5
Netherlands	7.6	5.3	13.8	..	..	20.0	53.7	44.0	19	6
Portugal	3.8	5.4	13.5	17.2	..	20.0	..	25.0	12	6
Spain	..	5.0	..	14.1	..	21.0	..	18.0	18	5
Sweden	9.0	8.0	43.0	45.2	..	..	25.6	76.0	11	6
United Kingdom	5.6	5.5	16.0	..	..	22.0	79.7	44.0	19	6
EAST ASIA AND PACIFIC AREA (Selected Countries)										
Australia	5.5	5.6	..	..	..	29.6	30.0	..	16	6
China	2.5	2.3	3.8	5.6	..	14.0	..	81.0	24	5
Japan	5.8	3.8	14.8	..	..	19.0	21.1	16.0	18	6
Korea, Rep.	3.7	3.7	10.4	14.7	..	12.0	7.1	6.0	32	6
Malaysia	6.0	5.3	12.0	10.9	..	22.0	148.6	77.0	20	6
N. Zealand	5.8	6.7	15.0	16.9	..	23.0	33.3	39.0	18	6
Thailand	3.4	4.2	8.8	..	..	11.0	..	25.0	20	6
NORTH AMERICA										
Canada	6.9	7.3	..	..	..	..	27.9	36.0	16	6
United States	6.7	5.3	27.1	..	..	24.0	48.3	23.0	16	6

Note: International data on education are compiled by UNESCO's Division of Statistics in cooperation with national commissions for UNESCO and national statistical services. The data in the table were compiled using a UNESCO electronic database corresponding to various tables in its *Statistical Yearbook 1996*. Further, data for 1995 are from UNESCO's forthcoming *World Education Report 1998*. They are not yet available in time series but are in print in the World Bank's *World Development Indicators 1998*.

Definitions: **Public expenditure on education** is the percentage of GNP accounted for by public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels. **Expenditure on teaching materials** is the percentage of public spending on teaching materials (textbooks, books, and other scholastic supplies) to total public spending on primary or secondary education. **Primary pupil-teacher ratio** is the number of pupils enrolled in primary school divided by the number of primary school teachers (regardless of their teaching assignment). **Duration of primary education** is the minimum number of grades (years) a child is expected to cover in primary schooling.

Graph 4
Issues of Efficiency: Average Years Required to Graduate from Primary School



chronically underfunded (Arcia, Alvarez and Scobie, 1997). Similarly, during periods of financial difficulty, funding for school materials is the first budget item to be reduced. Lending by international agencies for textbooks, maintenance or school supplies, for example, may have the unintended result of reinforcing misguided and unsustainable financing arrangements.

In some cases, a significant portion of spending on education goes to bloated bureaucracies at ministerial levels, excessive numbers of non-teaching staff and janitorial personnel. In some states of the Brazilian Northeast, less than one fourth of all financial resources were spent in the classrooms and some schools had more nonteaching than teaching staff.

Critical to the reform of financial management systems is better knowledge about expenditures. Many ministries and secretaries of education lack information about total spending on education over time and by category and level. Measuring total spending is made much more complicated in countries where educational spending is controlled in part or in whole by provinces, states, or municipalities. Without adequate data and careful analysis, such topics will remain the subject of casual policies and, often, misguided decisions.

Another critical reform, discussed earlier in this paper, is to change the way teachers are paid. Often, initial salaries are too low and fail to attract the best potential candidates. Professional advancement is based exclusively on seniority and the retirement age is way below that for other occupations.

The reform process should also take equity directly into consideration when making financial decisions. Education in rural and disadvantaged areas, which have little voice and votes, is systematically discriminated against. Forty percent

of teachers in primary education serving these groups are untrained, compared to almost none for students in the higher-income brackets. In some countries, only ten percent of poor rural children have access to preschooling, compared to 45 percent of the urban nonpoor. The public education system is increasingly abandoned for private schooling by upper- and middle-class income students. Their potential for a relatively stronger voice in political affairs contributes to widening the gap in the quality of education received by the privileged few and the general population. In several countries, over 30 percent of the education budget goes to support free higher education for the middle and upper classes.

Education reform should also be geared to effectively leveraging private resources for education and to move from subsidizing supply to demand, while paying due attention to equity objectives. Private spending on education is a major component of total educational spending in most Latin American countries. Even within the public system, private spending has been "hidden" in the form of family expenditures on uniforms, school supplies, books, transportation and "voluntary" contributions to schools through parent organizations. In addition, children from rural areas and small villages who attend secondary school in larger towns often live in the home of friends and relatives. There are many opportunities to encourage private support of public education through family subsidization and nonprofit management of schools by NGOs, provided equity considerations are kept in mind.

Private education, especially at the secondary level, can be strengthened and even supported, thus relieving a part of the burden on public resources, provided public education of quality is also made available to the underprivileged. Chile and Colombia have already implemented voucher systems whereby poor students can attend private schools. Efforts could be made to increase the access of private institutions to credit markets for school construction. Governments could also restrain from building public schools in middle- and upper-income localities. There is some evidence (Jiménez, 1995, on the Dominican Republic, and Swope, 1998, on *Fe y Alegría*) that privately managed education is less costly than public education on a per student basis and, even after controlling for income, produces higher achieving students. This is apparently a result of strong school directors who pay increased attention to results, higher student teacher ratios, and increased expenditures on learning materials. These conclusions are contradicted by recent research in Chile (Carnoy, 1998) that shows that as private schools become publicly subsidized, they lose their cost advantages, continue to select only those students with expected higher academic achievement, and do not raise the achievement of poorer students. Also, while most studies attempt to control for the socioeconomic level of students, they may inadequately measure the selection biases of private schools. Finally, institutions such as *Fe y Alegría*, a nonprofit organization affiliated with the Catholic church which is over 90 percent publicly funded, must be differentiated from other private for profit or nonprofit schools. At the very least, with adequate oversight and regulation, public support for and encouragement of privately provided education can leverage public funds. Appropriate incentive and accountability systems for private schools must be in place to increase the chances of achieving increased equity, efficiency and diversity.

In sum, be it on quality, equity or efficiency grounds, education financing is now generally recognized to be closely associated with patterns of resource use. If education finance is put right, significant resources will be liberated to be spent in underfunded areas and, at the same time, the resources available will be better used.

COST-EFFECTIVENESS IN PRIMARY AND SECONDARY EDUCATION

The total amount of resources invested by the IDB in education during three decades of educational lending is less than the amount of resources lost in one single year due to high primary school repetition rates (see Graph 4 for a summary of average years to graduate from primary education). A major effort is already under way in a number of countries to reduce

repetition, the most common response to the problem being mandatory automatic promotion. While this can be considered, for the most part, a step forward when compared to the "culture of repetition" prevalent in so many education systems in the region, the decision to ban repetition must be accompanied by wider organizational and pedagogic reforms. The establishment of automatic promotion between grades one and two by the state of São Paulo in 1990 provides an example of the unintended consequences of not following this advice. The state government did not accompany this administrative reform with programs of teacher training and intensive support for slow learners. The result was a drop in repetition between grades one and two but, eventually, an increase in repetition after grade two, with only a very minor decrease in overall repetition rates. More recently, the state has taken additional steps to reduce future repetition.

A recent study (Schiefelbein et al., 1998) asked a group of experts to estimate the cost-effectiveness of various primary school interventions in the region. One of the main conclusions of this exercise was that educational decisions throughout Latin America are often made without taking cost-effectiveness into account. Big expensive interventions are often undertaken where less costly ones could have a larger impact. Regional educational decisionmakers need to justify their decisions and the trade-offs more explicitly. The study suggested that Latin American countries need to seriously question some very expensive interventions which have a small impact on learning. Examples of such interventions are school feeding programs; wide-scale, use of computers instead of using them in pilot projects first; lowered student-teacher ratios without corresponding changes in pedagogy, and raising overall teachers salaries without complementary inputs and redesigned incentives. The study identified a number of almost costless but effective interventions which could be considered,[6] as well as the medium-cost high-impact interventions discussed in this paper.

At the secondary level, expansion and quality improvements together are costly. It is important therefore to seek the most cost-effective mixes of inputs to secondary education in order to achieve both quantitative and qualitative goals. This issue has not been adequately analyzed or explained.

Student-teacher ratios are, by far, the most important element affecting unit costs. In nearly all Latin American countries it appears that student-teacher ratios in secondary education are not high (the regional average is 16:1); but there is a tendency to reduce student-teacher ratios almost surreptitiously—without any explicit policy or guidelines. International studies examining the impact of class size on learning show ambiguous results. Korea, with among the highest scores on international tests, has had for many years a student class size of 40:1 in secondary schools. Reducing class size would make more sense if it were combined with intensive teacher training to change pedagogical approaches and to support the teaching of higher order skills.

Student-teacher ratios in secondary education are based on a combination of student class size, number of student-hours per week and number of teaching-hours per week. For example, if students attend classes 30 hours per week, teachers teach 20 hours a week, and class size is 25:1, then the student teacher ratio is 16:1. In addition, average school size, incomplete and/or limited infrastructure, restrictions with regard to subject areas teachers are permitted to teach, and policies on minimum and maximum hours of teaching in single or multiple schools can also have an impact on student teacher ratios.

While in nearly all Latin American countries (but not in the English-speaking Caribbean) it is important to increase the hours students spend actively learning in secondary school, a vast and expensive construction program (doubling

[6] For example, assign best teachers to first grade, reduce classroom teacher turnover during the school year, enforce regulations on the official length of the school year, undertake mass media campaigns to encourage parents to read to children, undertake sample testing of children and distribution of results.

the number of physical facilities to eliminate double shifting), as some countries have recently undertaken, is not the only option. Almost costless alternatives include increasing the length of the school year, ending the habit of long strikes and giving students more homework, which has been shown in many studies to have a positive impact on student achievement. In short, single shift with full facilities is an option but other more affordable approaches are available.

Policies which reduce repetition and dropout rates will lead to major savings on recurrent costs. Also, as noted previously, distance education has been shown to be a cost-effective means of extending coverage to the underprivileged and underserved (especially in rural areas, but also for adults) at lower costs than traditional secondary education. Finally, as noted above, support of private education can yield public savings, provided equity considerations are kept in mind.

USING INFORMATION TO MAKE DECISIONS

Indicators and Student Flows

In spite of some progress in a few countries, severe technical (lack of key data, inconsistencies in definitions) and institutional (low utilization, little comparability among countries and sometimes among provinces or states in the same nation) problems persist (McMeekin, 1998). In particular, the incorrect measurement of student flows results in overestimated dropout rates and underestimated repetition. Over ten years ago, Schiefelbein called attention to this problem in a number of Latin American countries. Fletcher and Costa Ribeiro showed that the dropout rate between grades one and two in Brazil was less than 2 percent, compared to "official estimates" of 50 percent. Student flows tend to vary greatly by educational cycle (primary, secondary), area (urban, semi-urban and rural), gender and region. Until recently, policy decisions were not based on an analysis of these variations. Better statistics, properly used, can have a major impact on policy. For example, in many countries, the findings on repetition have led to a redirection of policies toward primary education and a focus on understanding and reducing repetition.

Fortunately, many countries in the region are making major efforts to improve statistical systems, which is an essential component of better project design and improved decision-making and policy dialogue. The advent of the computer and the Internet has meant that information can now be collected and analyzed rapidly and made available in a timely and user-friendly manner. Six Latin American countries are participating in the OECD/UNESCO indicators project, which establishes a new and reliable set of critical indicators of inputs, outputs, processes, management, and costs (see OECD, 1998). Brazil and Chile, in particular, have taken the lead in developing education indicators and disseminating them to stakeholders.

Some of the statistics which ought to be collected to inform policy decisions include number of textbooks in the classroom per student, library books, actual number of school days and hours, and whether students attended preschool. At the secondary level, systems must be established to eliminate the double counting of teachers working in two or more schools. Systematic measurements of the cost of quality enhancing interventions must be undertaken. It is also possible now to systematically evaluate classroom pedagogy (through structured observation of representative school samples) or even the status of relationships between schools and the community.

Performance Evaluation and Standards

Until recently, most countries in the region (except the English-speaking Caribbean) had little idea of the extent to which their students were mastering the national curriculum. They had "standards" but did not have the means to measure them or meet them. Nearly every country has now set up a student assessment system which surveys a sample or an entire population of students at a given level of schooling in a nation, state, province, or municipality. In addition to national tests, a few countries have participated in international comparative tests. There is

increasing awareness that international comparisons, far from being simply "bad news," provide a benchmark for setting national learning goals, especially in developing problem-solving skills and higher order thinking as well as basic skills. With this in mind, fifteen Latin American countries joined together in 1995 to develop a regional fourth grade test in mathematics and language, through the *UNESCO/OREALC Programa de Medición de la Calidad de la Educación*, which receives partial support from the IDB. Initial results of this study are now available (UNESCO, 1998).

Public authorities are establishing a consensus to set educational goals and determine whether children, institutions and school systems are meeting them. The establishment of assessments is a critical step toward taking educational goals and standards seriously. Throughout the region, teachers and their unions have up to now been passive bystanders or even opponents of assessment. But it is in their best interest to adopt a more professional approach to their work, upgrade classroom procedures and participate fully in all assessment programs. Nonetheless, there are many shortcomings in the assessment movement in the region, including inadequate dissemination and usage, technical and methodological mistakes and misconceptions and, possibly, negative backlash effects of tests on teaching.

Properly utilized, assessments can influence many elements of the education system, including national education policy; education reform programs; education curriculum; decisions by parents, students, and teachers; local and regional education policy; and school-level pedagogy and programs. Assessments can help countries bring into closer alignment the intended curriculum, the actual curriculum, textbooks, teacher knowledge, classroom pedagogy and learning. The resulting adjustments will make it possible to set higher but attainable learning standards, improve teacher training and pedagogy, and ensure that the revised curriculum is followed in practice. Assessments can also be used to channel additional resources to the region's neediest schools, particularly those in rural areas and in urban slums. For example, Chile's "900 schools program," is explicitly directed at improving the performance of the worst schools. To provide useful information to schools, parents and teachers will require determining the "value added" of schooling by identifying "effective" schools that score higher than expected given the socioeconomic background of their students, or by measuring the improvements in a school's scores over successive periods.

To ensure that assessments are a truly a tool for improving learning it will be important to foster competent testing agencies outside government; train and adequately remunerate experts in curriculum testing, sample survey methodology and analytical techniques; participate in regional and international efforts; explore measurement of other areas of learning such as civic education; and as discussed below, carry out applied research to identify causes of high or low achievement. In addition, the smaller and poorer countries, which lack technical expertise and resources, will need to aim for only a small number of tests (e.g., only in math and language) in a few grades, and should consider forming consortia (composed, say, of Central American countries), riding piggyback on international programs and taking advantage of technical assistance from neighboring countries with more experience.

Applied Research: Understanding What Works

As of 1998, only a few evaluations of successful education experiments had been widely disseminated in Latin America. These included radio mathematics in Nicaragua (Jamison et al., 1981); educational TV in El Salvador (Hornik, 1973); the Northeast Education Program in Brazil (Harbison and Hanushek, 1992); *Escuela Nueva* in Colombia (McEwan, 1995; Psacharopoulos et al., 1995; Rojas and Castillo, 1988); P-900 in Chile (Gutman, 1993); *Escuelas Fe y Alegría* (Swope et al., 1998); EDUCO in El Salvador (Ministerio de Educación, 1996); and accelerated primary schools in Brazil (Oliveira, 1998). *The small amount of good research that has*

been adequately disseminated has had extraordinary impact.

While there may well be scores of research studies and good practice cases with reasonably good methodology, very little is used for policy purposes. In addition, much research in the region consists of irrelevant, poorly controlled studies of small-scale experiments with little chance of being replicated. To a significant extent this situation is changing. More policy-based research throughout the region is forthcoming, especially as a result of the increased number of national assessments of learning which provide clear targets to measure the impact of interventions.

In order to strengthen applied research, graduate centers of excellence in teaching and research (including regional centers of excellence in testing and measurement) must be strengthened. The same holds true for economics, sociology and political science departments that today perform most of the quality research on educational policy issues in Latin America and the Caribbean.

It will also be fundamental to create consensus among all stakeholders on the value and importance of research and on an agenda for research, which will vary from country to country. Researchers, policymakers and the informed public must agree on the goals of research and be willing to disclose the results, even if ambiguous or negative. Recent collaborative research efforts in El Salvador, Nicaragua (Reimers and McGinn, 1997) and Northeast Brazil (Ministry of Education, 1997) are good models to follow.

While it would be presumptuous in this document to identify a specific research agenda, three clear priorities come to mind. In the first place, the national assessments undertaken in nearly every Latin American country offer a rich source of data to measure what works in terms of increased learning. In the second place, there is a need for applied research on the impact of instructional technology on learning. Thirdly, the IDB (as well as the World Bank) has initiated studies on a wide variety of issues related to classroom pedagogy, teacher attitudes and effectiveness, and teacher careers and working conditions. Additional important subjects for study include measuring the cost-effectiveness of a wide variety of primary and secondary school interventions; seeking to better understand the relationship between critical skills needed in the current and future labor market and the learning provided by schools; and examining the effectiveness of new schooling objectives such as civic responsibility and participation, environmental awareness, good health practices and violence prevention. "Meta-analysis" of research already completed but poorly disseminated has to be considered another priority.

The Art of Implementing Education Reform

ONE PRIORITY, DIFFERENT INITIAL CONDITIONS

Developing a strategy to move primary and secondary education forward in each country requires deciding which problems need solving most urgently and to what degree other issues can be dealt with simultaneously. In each country, priority should be given to those reforms that are appropriate to the main problems faced in each country. These problems and their solutions will vary with the economic resources of the country and its level of educational development. For example, the "education index," a composite of an adult literacy index and a combined index of primary, secondary and higher education enrollment ratios, has been developed by the UNDP as part of its larger Human Development Index (see UNDP 1997). Based on 1994 data, countries with "high" educational development are Chile, Argentina, Uruguay, Peru, Guyana, Costa Rica and Trinidad and Tobago. The countries that fall in the "medium" range of educational development are Brazil, Mexico, Colombia, Panama, Venezuela, Ecuador, Paraguay and Jamaica. The "low" educational development nations are Bolivia, Nicaragua, Honduras, Guatemala, El Salvador, Dominican Republic, Haiti and Belize. In addition, there are large disparities in achievement within countries, especially in large nations. In Brazil, for example, average years of schooling range from 4.1 in the Northeast to 6.2 in the Southeast.

In a few lower-income countries, and in the poorer regions of others, access to full-length primary schools or to lower secondary schools is still limited. For these countries and regions, increasing initial enrollment is still an issue. Even more of a priority, in these as well as somewhat better-off countries, is improving conditions in primary education so that all children complete the primary level. In many cases, most children enter school, but a high percentage repeats early grades and usually drops out after three or four years. Teacher and student absenteeism is high, effectively reducing the amount of time that children spend in school during any year. In addition, children and teachers have limited, if any, access to books and other school materials, and the quality of teaching is generally poor, limited by the quality of teacher education and few opportunities for in-service training. Many rural schools have a single teacher or lack the last year or two of a six-grade system. Most teachers are not trained to teach in multi-grade situations even though there are alternatives, such as the *Escuela Nueva* and interactive radio, which can greatly improve the quality of education, even in isolated areas. It is very important to recover the true value of rural schools as a first step in the process of turning them into good schools. Instead of dismissing rural schools as second rate, appropriate recognition has to be made of their peculiarities and adequate support must be provided in order to make them as effective as urban schools, an objective that has already been achieved in several cases in the region.

In countries such as Argentina, Chile, Costa Rica, Cuba, Jamaica, Mexico, Trinidad and Tobago and Uruguay, 85 percent or more of the age cohort completes fifth grade. For these countries and in the larger urban areas of low-income countries, the main problem is no longer access or primary school completion, but the learning process itself. Even in these countries, problems such as hard to get books, the inability of sending books home with the students, teacher and student absenteeism, poor physical facilities and bad management are still a problem, particularly in poorer provinces and states.

The focus of secondary education in the lower-income countries will be on expanding access to a complete lower-secondary education, especially in rural areas. In higher-income countries, the focus will be on reaching the remaining underserved populations in lower-secondary education and on expanding upper-secondary education. Quality must be improved in all countries subject to their financial means. The level of increases in secondary enrollment in each country will depend on socioeconomic conditions and outlooks, and the rigor with which countries identify cost-effective solutions to meet both quantitative and qualitative targets.

Key shared challenges remain for all countries in the region. In practice, this means that lower-income countries and "late starters," such as Brazil, hope they can meet coverage and quality goals simultaneously through innovative funding mechanisms, incentive systems and short-term training in "best practices." Policy reform must balance immediate quantitative priorities with actions that anticipate the problems that may arise in the next stage. The challenge is to acknowledge the most urgent problems and, simultaneously, explore means to avoid the difficulties experienced by other countries that have already achieved "functioning schools."

DYNAMICS OF THE REFORM PROCESS

Reforming education in any country is a difficult process. National educational systems have a particular organizational history, with vested interests built around existing organizational structures. Teaching methods and content have long histories. Examination systems and the curricula they drive have become part of the nation's culture. The educational system in many countries, states and municipalities is the single largest employer and single largest source of income for local professionals. Such structures are extremely difficult to change because they are as much a way of life as a way of making a living.

In Latin America there is little tradition of a well-educated, relatively efficient, merit-based local level administration with internalized professional norms. Educational reforms must change the way schooling is delivered while simultaneously building the capacity to implement the changes.

In the best of all worlds, once reforms are under way, they create their own dynamic and serve to weaken traditional obstacles. This is the case when reforms unleash talent and innovation that was previously constrained by institutional obstacles or policies that stifled local initiatives. It is also the case when new structures are developed that work to increase effort. For example, devolving control of educational finances and supervision to the communities may greatly improve teacher and pupil attendance and function much better than traditional teacher supervision mechanisms. Evaluative examinations that show how schools are doing over time may stimulate teachers and principals to try much harder to improve pupil performance. But how these well-conceived reforms fare in the real world at the local level depends largely on several factors, as noted below:

- *Reform requires leadership and consensus.* Considering that the countries of Latin America tend to be weak and unable to enforce policies which depend on thousands of scattered actors (teachers and administrators), leaders must foster consensus and build coalitions among bureaucrats and businessmen, unions and public opinion, principals and teachers, as well as parents and students, since educational reforms cannot be drafted in central or provincial ministries and decreed from the top. The reform process has to be transparent and engage teachers, parents, business groups, labor unions and educational administrators throughout.[7]

[7] The PREAL-Inter-American Dialogue project also has shown that leadership, policy analysis and strategic direction for the reform process can be provided by locally-based NGOs with some foreign assistance. The work being done in Guatemala and by Chilean ex-president Aylwin in Ecuador, which is centered around policy dialogue as a primary tool, could be applied to similar exercises.

Box 2
CARICOM Countries

Many of the observations, conclusions and recommendations in this paper apply to the countries of the English-speaking Caribbean (CARICOM). However, these countries have a very different tradition from the other countries in the region and, to some extent, a different set of problems. For example, the quality of public schools in the CARICOM countries tends to be higher than that of the private schools; schooling begins at age five compared to age seven in most Latin American countries; CARICOM countries have a long tradition of high stakes evaluation of learning and achievement at the end of each cycle of education; the number of hours of schooling is generally higher than in Latin American countries; and textbooks are readily available. In addition, there is at least one piece of evidence that the CARICOM countries do better than Latin American countries on international examinations: in the 1989 IEA international reading examination Trinidad and Tobago scored significantly higher than Venezuela. On the other hand, absenteeism is a major problem in CARICOM countries and achievement levels for girls are higher than those of boys. Secondary enrollment percentages in CARICOM countries are higher, but percentages in higher education are lower than in the rest of the region. Secondary education is highly differentiated among academic, technical and other types of schools. Overall, CARICOM countries invest more in education as a percentage of GDP than their counterparts in Latin America.

Even with these differences these countries face issues of low achievement, especially among boys. CARICOM countries are seeking to emphasize communications and practical mathematics skills, reduce excessive secondary school diversification, expand differentiated post-secondary training and encourage private expenditures in education. These countries are seeking to diversify and expand their economies to reduce high unemployment that also leads to widespread emigration, often of the most talented graduates.

- *Social marketing is the means to obtain the collaboration of civil society and, in particular, parents.* Social marketing has been used extensively in health but, with a few exceptions, totally inadequately in education. Contrary to popular belief, social marketing is not intuitive. It is not about making more speeches or getting more media exposure. Social marketing has become a highly complex and specialized field that involves activities from informed policy dialogue among the members of the elite, to the key process that starts by asking what will resonate with the target clientele of the reforms and with key stakeholders. It is a professional field of expertise and, therefore, education reform has to allocate funds for well-designed and executed social marketing activities.

- *Reforms require transparency, continuity and feedback permitting mid-course corrections.* Reforms should not be identified with a particular government, which is in power for only a short time, but with a commitment by all the political stakeholders. Transparency derives from the honest interaction of applied policy research with reform processes, and consistent and reliable information about the course of reform. Consensus-based research can reveal whether reform objectives are being realized and how strategies should change.[8]

- *Checks, balances and incentives must encourage actors and stakeholders to behave in ways that strengthen the reform process.* The starting point of such incentives is to include stakeholders in the decision processes, thus developing ownership of reform by key actors. The incentives also include institutional analysis and identification of the variables that must change in order to change institutional behavior. What is the probability that there will be serious political resistance to the reforms from various

[8] The interaction of applied policy research with participatory approaches can be very fruitful (e.g., Reimers and McGinn's work on HIID experiences, 1997).

groups? Do institutions exist that are willing to implement the reform? What is the incentive structure that will make reforms self-reinforcing and durable?

- *Key actors must have the capacity to implement reforms.* Many reforms assume that teaching and learning will improve by simply decentralizing control over decision-making, creating a much better curriculum, sending books to schools, or making in-service training available to teachers. This is rarely the case. Reforms need to improve the capacity of teachers and administrators at all levels to deliver educational services more effectively. Capacity building includes developing information systems, dissemination mechanisms and evaluation systems, and training key actors to use them to improve teaching and learning.

A specific area in need of renewed attempts at policy research and dialogue is the role of teacher's unions, a key player in the dynamics of educational reform. Conventional wisdom has it that unions oppose educational reform, even if they may have not always been entirely effective (Murillo, 1997). Indeed, teachers' unions in Latin American countries have generally done poorly in getting the public to identify with their position, in part because teachers' unions have rarely fought for reforms that increase the educational performance of children or make schools more effective.

At the same time, governments and local administrators have often failed to recognized the difficult situations in which teachers work. A major requirement of reforms in most countries of the region must be overcoming a long history of conflictive relationships between the Ministry of Education and teachers' unions, which has built up a thick layer of mutual mistrust. Teachers need to feel that they are valued by administrators. Minas Gerais and Chile have already had success in getting union support for reform by improving teacher's working conditions and pay as part of a focus on school improvement.

Until recently, international lending agencies paid surprisingly little attention to institutional capacity and problems of implementation. They have now learned that the process of developing the reform and the human capital available to carry it out are absolutely crucial to the reform project, just as the success of a business depends on the individuals running it as much as the attractiveness of the products it produces. Agencies such as the IDB can help in building consensus for the reform and can provide or finance technical assistance for strengthening the implementation capacity of educational systems. They also have the responsibility of playing an active role in disseminating good practices emerging in the region and the world, and their own policy and research work, thus contributing to a well-informed policy formulation process.

Looking to the Future: Developing an IDB Action Plan

LEARNING FROM THE PAST: THE IDB'S EDUCATION LENDING

Since 1965, the year its first education loan was extended, the Bank has committed on average close to 5 percent of its yearly lending to the education sector. Between 1994 and 1997, lending to education increased to 9.5 percent of total lending. To a large extent, this increase coincided with the IDB's new development strategy as articulated in the "Report on the Eighth General Increase in Resources" of 1994, which specifically provided for increased support to education (Comas, 1995).

Over time, and particularly since 1994, the nature of lending for education changed as the IDB began to more fully understand the nature of the education process. The Bank has increasingly taken a systemic reform-based viewpoint. Infrastructure support has decreased and more support has gone to renovation and individual school expansion rather than new construction. An increasing amount has gone to equipment and materials. Within this budget item, the emphasis has shifted from laboratory equipment for science and technology, to textbooks and, most recently, to mass media and information technology. There has also been a major growth of support for institutional development, improvement of information systems and training of teachers and administrators. Curriculum reform is now regularly linked with components such as textbook production and teacher training activities. Quality improvement rather than expansion per se has become the focus of recent IDB lending, even though this should not be taken as an indication of a lack of interest in supporting the construction and rehabilitation of educational infrastructure wherever justified, as well as on helping to ensure adequate and sustainable physical maintenance programs.

Bank lending through 1976 focused on higher education, followed by vocational/technical training and science and technology (see Table 4). In 1976, the first loan in support of primary education was made to Colombia. Since then, the IDB has rapidly expanded its lending to primary education. In fact, from 1978 through 1993, over 80 percent of Bank lending for education was directed toward primary education, as it became increasingly clear that the region was far behind its competitors in the provision of an adequate basic education.

Support for secondary education, as well as technical and vocational education, has increased since 1994. In 1997, secondary and technical/vocational education accounted for more than 80 percent of new IDB education loans. Lending for higher education as well as for science and technology went down after 1989. However, following the development of strategies in these two areas, an upsurge can be expected in the next few years.

IDB LENDING PRIORITIES AND STRATEGY

The IDB is committed to the development of education in the region. The Bank is expected to provide support to all levels of education—primary, secondary, and higher education and training, as well as the related areas of early childhood development and science and technology. Given current needs, lending to secondary education is expected to be high in quanti-

tative terms, if not in the numbers of operations approved.

Regardless of the size of its lending program in the sector, the main objective of support for primary and secondary education will be to improve quality and equity. The IDB will also support increased access to schooling where necessary, especially at the secondary level.

Despite the IDB's intention to support the reforms described herein, it cannot impose education reform on countries. The locus of reform has to be inside the country. The political will, the leadership and the right institutional climate have to be present in order for reform to begin and thrive. The role of multilateral banks is to be on the alert and ready to step in when conditions are ripe. Projects will be designed to respond to the needs of each country, rather than follow pre-set models and standard approaches. The IDB will understand the moment of the country, its institutions and its needs, as well as the variety of economic and educational conditions within the region.

In all of its efforts in primary and secondary education, the IDB will seek to ensure the quality, implementability and sustainability of its projects. The "Strategy on Supporting Reform in the Delivery of Social Services" details the nature of these approaches. In particular, the IDB will encourage client, beneficiary and stakeholder ownership; undertake sectoral and economic analysis to gain an understanding of the issues and options in education reform and their relationship to the larger socioeconomic environment; analyze institutional capacity and sustainability; and devise simple but robust monitoring and evaluation instruments. During the process of designing projects the IDB will test new ideas on a small-scale (pilot project) basis; use a process rather than a blueprint approach for education reform projects; and utilize a wider range of lending instruments.

Some countries can tackle very ambitious reform projects because they have stakeholder commitment, strong leadership and institutional strength. Other countries, due to political turmoil, acute poverty, or institutional weaknesses cannot execute development projects that are too complex or require upsetting powerful vested interests. The staff of the Bank will evaluate each situation and design the best and most realistic project, considering the great potential for change that is created by the funds mobilized in a loan, but also the difficulties of implementation. In some cases, it will be necessary to realize that the moment is not ripe for an IDB loan or that objectives, especially those related to reform, need to be modest.

To the extent relevant in each specific context, IDB operations in primary and secondary education will be guided by the observations and recommendations found in this paper, as discussed below.

The IDB will support reviving the school as an active sphere of management, innovation and social responsibility through increased autonomy, intense community participation and, wherever relevant, decentralization and local government involvement. This will be seen as part of an integral effort aimed at establishing a new role for central authorities in terms of oversight, provision of incentives and raising expectations regarding school effort and pupil performance.

In view of its importance, the IDB will significantly increase its financial support of pre- and in-service training of teachers. This could include, inter alia, supporting innovative programs and the extension of those programs judged cost-effective, adequately equipping teacher training institutions, and establishing incentive programs to attract higher quality teachers to the education system. The IDB will also support strengthening the role and performance of teachers through innovative approaches to recruiting, training, supporting and rewarding effective teachers and making them true partners in reform efforts. The IDB will support effective pre-service training as well as in-service training which is innovative in design and organically linked to sustainable pedagogic and management innovations. The IDB will support analyti-

cal work and programs to improve teacher incentives and accountability at the school level.

The IDB will support a prudent but intense application of the potential of technology to expand coverage and improve quality. Efforts will be made to replicate and adapt the already successful use of radio and television to improve quality and increase access, as well as to identify new objectives for mass media programs, and evaluate these programs. The IDB will also support a wide variety of development and pilot programs in the use of computers and the Internet, especially in secondary education, focussing on developing software and training programs, in anticipation of the time when costs will be low enough to permit widespread adaptation.

The IDB will focus on sustainable financing of the most cost-effective mixes of inputs and processes to raise student achievement and retention in school, and the use of financing mechanisms to provide incentives for cost-effective behaviors among the key education players. The IDB will emphasize support for attempts to improve the productivity of educational spending, rather than simply contributing with additional resources per se, even though such additions will, no doubt, be granted when justified by the particular situation of a country. In particular, IDB lending for educational materials will insist on mechanisms assuring their regular delivery to classrooms and their daily use, as well as the development of budgeting processes within the ministries of education that sustain steady flows of resources for their purchase and distribution in the future.

The IDB will infuse its support to primary and secondary education with a clear and sustained focus on equity. The objective will be to provide school places of good quality to lower-income students. At the primary level, this will include a wide variety of actions: targeting school construction in urban slums and rural areas, supporting compensatory programs aimed at socially disadvantaged and indigenous children, targeting preschooling, incentive programs for teachers to work in underserved areas, etc. Equity enhancing actions in secondary education could include direct subsidies to poorer students, targeted school construction, teacher incentives, and mass media programs aimed at older students and those living in isolated areas. At all levels, the Bank will carefully watch the gender balance. It will suggest compensatory policies both in poor rural areas where girls fall behind and in more advanced areas where boys' enrollment is falling behind that of girls (particularly at higher levels of education).

The IDB will support better assessment, statistics, applied research and feedback to stakeholders as well as pilot projects, experimentation and innovation. This will include enhanced awareness of bottlenecks in student flows; monitoring performance on a comparative basis, not only students in a particular classroom, but all students and schools in a country, or even in a set of countries; and policy-oriented research on education issues, as an important ingredient in strengthening the capacity of all concerned parties to gather and process the necessary data for the purpose of informed policy dialogue.

The IDB will support primary and secondary education in the context of a concern for mustering widespread social support for reforms from traditional and nontraditional stakeholders alike: students, parents, teacher and educational authorities, but also NGOs, businesses, the media and others. Deliberate efforts at informed policy dialogue nurtured by top level educational research and dissemination of regional and international good practices will accompany education reforms at the design, implementation and evaluation stages.

While the IDB is pleased to respond to the increasing requests for support of secondary education, it does not regard primary education as a transient preoccupation but as a long-standing commitment. While some countries have been able to increase significantly the performance of their primary schools, the issue of primary education is far from resolved and for a considerable time there will be a need to pursue its further development. The emphasis will be on providing quality education to all children, and on

ensuring that all children finish six and eventually nine years of basic education with functional skills and knowledge. While large-scale capital investments in primary school construction may no longer be necessary in most countries, major investments are still called for in elements such as preschooling, learning materials and training. The IDB will, therefore, proactively review progress in primary education and seek follow-on loans to the current set under implementation.

With regard to secondary education, the IDB is prepared to fund the capital costs associated with expanding access. While the IDB will provide capital funds for construction of physical facilities and provision of equipment, teacher training and many other expensive items, unless countries are willing to commit additional resources to fund current expenditures, the improvements will not materialize and the IDB loans will not pay off. For the lower-income countries, the IDB's focus will be on expanding access to lower-secondary education; for higher-income countries, the focus will be on reaching underserved populations in lower-secondary education and on overall expansion of upper-secondary education.

The IDB's support for increased access to secondary education will always be accompanied by attention to the design of secondary school models which are relevant for the 21st century, to quality improvement, increased equity and efficiency, and better school management. Redefining the model of secondary education could include establishing a common curriculum core emphasizing higher order learning objectives, new approaches to technical and vocational education, new curricula in areas such as technology awareness, and developing outreach programs for young adults seeking secondary school equivalency.

Attention to the most cost-effective mix of inputs to achieve secondary education goals will include policy measures related to student teacher ratios, inexpensive school construction and optimum school sizes, cost-effective ways of increasing time on task, and use of private sources of funding provided equity needs are addressed. Strategies to attract higher quality teachers to the profession and to reform teacher training are of particular importance in secondary education.

Given the difficulties of appropriating more public funds for education, there are good reasons to leverage public funds through support for private education. Subsidies may permit the private sector to cater to needy clienteles, possibly with more efficiency and lower unit costs than the public sector. Complex regulatory issues will eventually surface as the private sector expands at all levels, as is already the case regarding private higher education and private providers of preschool education. These issues are far from clear at this point and increasing attention to them is to be expected both on the research and policy fronts. This increased attention will result from public pressures in favor of quality control and improved information about the options open for the students and families. Hence, the IDB will consider funding some fixed costs of private education, provided equity considerations are met and regulatory issues are duly sorted out; this may require some changes in its financial tools.

IDB LEADERSHIP IN THE REGION

As education reform becomes a priority of governments and society alike, and as innovation proliferates, the IDB is uniquely positioned to play a role in collecting, systematizing and disseminating good practices in the field. In this role, the Bank can make widely available the stories of success and failure for the benefit of each new attempt at tackling the challenges of improving learning, equitable access and educational attainment throughout the region. In particular, many new solutions to long-standing education problems are cropping up throughout the region. These efforts can serve as models for other countries facing similar issues. There is much to learn from others, but each situation also requires analyzing what will work in that particular time and place.

To play a regional leadership role in primary and secondary education requires identifying emerging issues and seeking an understanding and a consensus on them. It is also necessary to interact with other development agencies and with the countries themselves, and find funding sources. In particular, jointly as well as on its own, the IDB will support applied research, on-site and virtual conferences, study tours and training programs.

The IDB has already identified a number of crucial emerging issues in primary and secondary education. Work is under way on some of these issues, while the IDB is seeking partnerships and funding for others. Four emerging issues that are of particular importance are those related to technology in education, teachers, assessment and statistics, and private education.

With regard to technology, the region needs to undertake pilot and development projects to meet long-term educational needs, with a strong focus on teacher training and software development. With this in mind, the Bank has identified math and science education at the secondary level as a critical area for improvement. The IDB has initiated planning work on a regional pilot project to improve learning in mathematics and science in "average" public secondary schools, using a "multi-channel" approach to learning (e.g., computer, Internet, CDs, radio, television, print, face-to-face teacher training etc.). The aim is to begin with about 50 schools in each of four countries to identify specific learning needs in science and mathematics, identify the most appropriate learning materials worldwide, establish the best combination of channels for learning, and begin in-service teacher training. It is expected that the pilot and development project would be financed through a combination of technical cooperation and project funds. The result would be to position the region to take advantage of the expected rapid decrease in the cost of computing power and connectivity.

The IDB has undertaken a series of studies examining ways of attracting better teachers into education, case studies of successful pre- and in-service training programs, teacher careers, oversight and supervision of teachers, the potential role of teachers' unions in improving quality, and teachers' salaries. More work will be needed to define best practices, to disseminate the results to policymakers and leaders, and to turn these into bankable programs.

The IDB supports the UNESCO/OREALC *Laboratorio Latinoamericano de Medición de la Calidad de la Educación*, which has enabled Latin American countries to share their experiences and to give a regional test of reading and mathematics achievement to third and fourth graders. In the future, it will be important for Latin American countries to continue to share information and experience on this very complex topic to ensure that assessment and other measurement instruments truly serve to improve education. A specific future need is undertaking applied research to exploit the rich sources of data from country and region-wide assessment efforts, as well as promoting regional centers of excellence in assessment and applied educational research. Another fundamental activity is to develop comparative education statistics, using a "report card approach," to track progress in primary and secondary education which can build on existing and future national and international statistical systems. Of particular importance will be to track progress in reducing repetition.

In some cases, partial subsidies permit the private sector to cater to needy clienteles with more efficiency and lower costs than the public sector. Hence, the IDB will consider funding some costs of all levels of private education, provided equity is taken into account. Analytical work is needed to identify and evaluate the different ways that the public sector can support private education to extend the reach of public funds, increase competition and ensure equity, as well as to develop new financing tools for the IDB.

Additional important subjects for study include measuring the cost-effectiveness of a wide variety of primary and secondary school interventions; seeking to better understand the relationship between critical skills needed in the current

and future labor market and the learning provided by schools; and examining schooling objectives such as civic responsibility and participation, environmental awareness, good health practices, and violence prevention, which have rarely been studied in the past. "Meta-analysis" of research already completed but poorly disseminated has to be considered another priority.

Given the needs and the limited resources available, the Bank will continue to cooperate with other key players in the field, especially the World Bank, UNESCO, ECLAC, UNICEF and USAID, by identifying common issues and research agendas, sharing information, jointly supporting conferences and analytical work, and capitalizing on the relative strengths of each of these organizations. The IDB will make special efforts to link with and begin a dialogue with NGOs working in education, including groups such as the Inter-American Dialogue, the Center for Research in Development and Education (CIDE), and think tanks and advocacy groups at the country level, as well as the growing number of private institutions in education and in publishing.

Education loans have become complex operations with far more vulnerable components than infrastructure loans. There is an increasing perception inside and outside the Bank that present financial tools are inadequate for dealing with the new generation of education loans (the same could be said for social sector loans in general). The preparation cycle is too long. There is little flexibility to begin some components earlier. There are no short procedures to make small loans, which are very important in some areas. For all these reasons, the IDB will reconsider the set of financial instruments that can be deployed to support education. One possibility under consideration is the development of a simplified procedure for financing pilot projects, research and participation in international programs. Other possibilities include financing private education through support for student loan schemes (usually but not exclusively for higher education), lines of credit for private school construction and voucher systems.

According to the Plan of Action endorsed by the Presidents gathered at the Summit of the Americas in Santiago de Chile in April, 1998, *"...the IDB is encouraged to work with member countries to substantially increase the share of new lending for primary and secondary education, by more than doubling the quantity over the next three years, compared to the previous three years."* The Bank is committed to this objective, although it will be reached only to the extent that the Bank's borrowers are also committed to this level of external financing, if the IDB has adequate staffing and more streamlined procedures, and if ongoing projects are implemented efficiently and effectively. The IDB will also have to take a more proactive attitude in the search for meaningful operations. To further the Bank's commitment, Management will shortly present an action plan for the next several years that outlines steps to achieve the lending goal and other objectives stated in the strategy.

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Annexes

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Secondary Schools and the Transition to Work in Latin America and the Caribbean, by C. de Moura Castro and M. Carnoy. Sustainable Development Department Technical Papers Series, EDU-112, February 2000. (A review of curriculum, organization and models of secondary education as they relate to the labor market.)

Annex Box 1:
What is Quality in Education?

Educational quality has many, sometimes conflicting definitions. Quality is best defined as the extent to which children learn the basic skills and knowledge necessary to function in a modern society and utilize these skills in their life. Since this is difficult to measure, there are numerous proxies for this definition:

1. Output Quality: The most fundamental definition of quality is that of the extent to which children attain the knowledge and skills which society wishes to impart to them. These are not simply academic skills (e.g., Howard Gardner has identified seven such dimensions: linguistic, logical-mathematical, bodily-kinesthetic, spatial, musical, inter-personal, and intra-personal). In the 21st century the technological revolution will require new worker skills. The new worker will need to be a problem solver, flexible, computer literate, a communicator, and able to work in teams. A high quality elementary and secondary school system is one which has a good match between what children learn and what is needed to function in a modern society. Output quality can be measured in the labor market through tests of workers' knowledge and measurements of worker productivity. This is rarely done because of complexity and costs. In schools, output quality can be measured by achievement tests. Given current curriculum goals throughout the world designed to educate this kind of citizen, low quality can, in part, be defined as "rote learning or learning in isolation" and high quality would be the learning of higher order skills.

Implications for Latin America: LAC education systems are not educating for the citizen-worker of the 21st century. Nor is LAC providing adequate mathematics and reading skills. IEA studies show that LAC countries are far below the developed world and also below the Far East and the Middle East. On international tests, LAC scores only above Africa. The English-speaking Caribbean may be doing slightly better.

2. Quality as Value Added: Quality may be defined in relation to "value-added." In this definition, a high quality school or school system is one which increases the learning of students relative to their status at the beginning of their schooling period. This suggests that a school whose clientele is children of illiterate peasants could be of "higher quality" than an urban middle class school even if its absolute results, in terms of test scores or retention, were relatively low. Quality as value added can be measured statistically and through time series data. A number of countries are explicitly recognizing this element, especially by providing additional resources to at risk schools, recognizing schools doing better than expected (e.g., France) and providing rewards to schools which improve their scores.

Implications for Latin America: There is not enough awareness of this issue in LAC, both among political leaders and the general public. Chile has recognized that low performing schools need special help and is providing incentives for improved performance.

3. Quality as High Standards: Quality may also be defined as "high examination and promotion standards." This definition is useful if it is accompanied by a commitment that all children can achieve these standards, but is counter-productive if adequate resources are not provided and most children end up failing. In the United States, chaotic expectations of learning lead to no standards, but states are now seeking to define and enforce standards, especially at the secondary level.

Implications for Latin America: There is evidence that teachers are using "high standards" to fail children in first grade when they are unable to read by the end of the first year. But this approach does not take into account different learning styles or children's impoverished backgrounds, and is counterproductive. At higher grades, while the national curriculum can be clear and modern in its objectives, teachers pay little attention to it and learning is inadequate. The "standards" movement at (for example) the eighth grade level requires realistic curriculum expectations and a commitment providing adequate physical resources and school processes so that all, or nearly all, children can achieve at the desired level. Brazil is moving in this direction.

4. Quality of School Inputs: Quality is often defined in relation to physical and other inputs, such as school buildings, textbooks, computers and number and educational levels of teachers. A high quality school would be one with good physical facilities, adequate equipment and educational materials, and well-trained teachers. It is assumed that input quality will lead to better learning achievement and retention, and there is a fair amount of research seeking to measure this relationship.

Implications for Latin America: School inputs are inadequate in rural schools (e.g., expenditures per student, teacher qualifications) and often in urban slum schools. An extreme case is Northeast Brazil. A review of research has identified textbooks, teacher subject knowledge, time on task, school snacks and others as input elements that have an impact on achievement, but has not endorsed lower student-teacher ratios as effective, contrary to popular belief. Teacher qualifications, as measured by number of years of formal training, have also been found to have a weak impact, if any, on student learning, probably due to the fact that years of training is a poor proxy for quality teaching.

5. Quality in School Processes: Quality may also be considered in relation to schooling processes. In this case quality refers to good school management, well articulated, modern classroom pedagogical practices, flexibility to revise or change processes as needed, and dedicated teachers working together as a team to achieve specific goals. Good school processes are often the "missing element" necessary to ensure that school inputs lead to increased learning and retention. They can be measured mainly through systematic observation (qualitative research). There is increasing interest in this element of schooling.

Implications for Latin America: The "typical" school has a director who has been centrally selected on the basis of bureaucratic criteria; teachers often have two or more jobs, rarely remain in the school after teaching, work in isolation, and are inadequately supervised ("civil service" mentality). But there are many efforts in the region to change school processes (e.g., *Escuela Nueva* in Colombia, EDUCO in El Salvador, community involvement in schooling in Minas Gerais and in secondary schools in Nicaragua, teacher learning circles in Uruguay, etc.)

6. Proxies for Output Quality: levels of literacy and schooling in the general population, and completion and repetition rates: Levels of schooling can be taken as proxy for learning in the general population. This assumes rough equivalency of (for example) secondary school levels across countries. Within the school system, in the absence of well structured, internationally comparable achievement tests, and considering that it is difficult to test children who drop out of school, the number of children who complete a particular level of schooling (e.g., completion rates) is often taken as a proxy for learning achievement. High repetition rates are also often considered a proxy for low achievement since, clearly, something is amiss when upward of 50 percent of children fail the year.

Implications for Latin America: Levels of schooling in the general population are significantly lower than East Asian countries and the difference is growing. Current completion rates are low, compared to competitors. Repetition, especially in basic education, is the highest in the world, leading to inefficient use of funds. Repetition is grossly underreported in official statistics. Only modest progress in reducing repetition.

Other publications from the Education Unit

Higher Education in Latin America and the Caribbean. A Strategy Paper. December 1997, N° EDU-101. (English, Spanish, and Portuguese versions available)

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Education Statistics in Latin America and the Caribbean, by R.W. McMeekin. January 1998, N° EDU-104. (English and Spanish versions available)

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Secondary Education in Latin America and the Caribbean: The Challenge of Growth and Reform, by Laurence Wolff and Claudio de Moura Castro. January, 2000, N° EDU-111. (English only)

Secondary Schools and the Transition to Work, by Claudio de Moura Castro, Martin Carnoy and Laurence Wolff. February, 2000, N° EDU-112. (English and Spanish versions available)

La educación superior en América Latina - Testimonios de un seminario de rectores, Salvador Malo and Samuel Morley, editors. (Spanish only)

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Education in the Information Age, Claudio de Moura Castro, editor. (English only) Available through the IDB Bookstore, phone (202) 623-1753, e-mail: idb-books@iadb.org.

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